DS610CF
Service Manual

Version 0.1

Avision Inc.

Contents

1. INTRODUCTION 1-1

1.1 GENERAL NOTES FOR SERVICING 1-1
1.2 GENERAL DESCRIPTION 1-2
1.3 COPY FEATURES 1-2

2. SPECIFICATION 2-1

2.1 BASIC SPECIFICATION 2-1
2.2 ADF SPECIFICATION 2-2

3. UNPACKING, INSTALLATION, AND TRANSPORTATION 3-1

3.1 PRECAUTIONS OF INSTALLATION 3-1
3.2 UNPACKING PROCEDURE 3-1
3.3 INSTALLATION 3-2
3.4 PLACING THE ORIGINAL 3-4
3.5 TRANSPORTATION 3-5

4. PARTS IDENTIFICATION 4-1

4.1 EXTERNAL VIEW 4-1
4.1.1 Front view 4-1
4.1.2 Rear view 4-2
4.1.3 Top view 4-3
4.1.4 Wiring Components External View 4-4

5. THEORY OF OPERATION 5-1

5.1 INTRODUCTION 5-1
5.2 MAIN CONTROL UNIT 5-2
5.2.1 System diagram 5-2
5.2.2 Main Control circuit 5-3
5.2.3 Video circuit: 5-4
5.2.4 lcd module Circuit 5-6
5.2.5 Sensor input 5-7
5.2.6 Sub power supply circuit 5-7
5.2.7 Power supply 5-8

6. TROUBLESHOOTING 6-1

6.1 TROUBLESHOOTING FLOWCHART 6-2
6.1.1 Power on toDS610CF ready 6-2
6.1.2 Copier operation 6-3
6.1.3 Contorl panel operation 6-4
6.2 TABLES 6-5
6.2.1 LCD does not display 6-6
6.2.2 Printer does not react 6-6
6.2.3 Reading is not performed 6-7
6.2.4 printer does not print 6-7
6.2.5 Image unclear 6-8
6.2.6 noise generated 6-8
6.2.7 LCD does not show message after command 6-9

7. PREVENTIVE MAINTENANCE 7-1

7.1 CLEANING THE DOCUMENT GLASS 7-1

8. DISASSEMBLY 8-1

8.1 SERVICE TOOLS 8-1
8.2 LUBRICANTS 8-2
8.2.1 Mechanical Unit Lubrication 8-2
8.3 PROCEDURE FOR DISASSEMBLY AND REASSEMBLY 8-4
8.3.1 Notes on disassembly 8-4
8.3.2 document cover 8-4
8.3.3 Upper housing 8-5
8.3.4 Main Control Board Assembly 8-6
8.3.5 motor belt 8-7
8.3.6 optical chassis 8-8
8.3.7 CCFL Inverter PCBA 8-10
8.3.8 lamp assembly 8-11
8.3.9 motor unit 8-12

9. ASSEMBLY 9-1

9.1.1 Document Cover Assembly 9-1
9.1.2 control board assembly 9-2
9.1.3 upper housing assembly (1) 9-3
9.1.4 Upper housing assembly (2) 9-4
9.1.5 Main board assembly 9-4
9.1.6 lamp assembly 9-5
9.1.7 Optical assembly (1) 9-6
9.1.8 Optical assembly (2) 9-7
9.1.9 Optical assembly (3) 9-8
9.1.10 Optical assembly (4) 9-9
9.1.11 Optical Adjustment 9-10
9.1.12 Main Body Assembly (1) 9-11
9.1.13 Main Body Assembly (2) 9-12
9.1.14 Main Body Assembly (3) 9-13
9.1.15 Main Body Assembly (4) 9-14
9.1.16 Main Body Assembly (5) 9-15
9.1.17 Run-In and Button Test 9-16

10. DS310F AUTOMATIC DOCUMENT FEEDER(ADF) SERVICE GUIDE 10-1

10.1 INSTALLING THE ADF 10-1
10.1.1 main components 10-1
10.1.2 to Install the ADF 10-1
10.1.3 Connecting the Cables 10-2
10.2 MAINTAINING THE ADF 10-3
10.2.1 Cleaning the ADF 10-3
10.2.2 Replace the ADF Snap-in Pad Module 10-4
10.3 HOW TO CLEAR THE PAPER JAM 10-5
10.4 ADF DISASSEMBLY 10-6
10.4.1 Disassembling procedure 10-6

11. PARTS 11-1

11.1 SPARE PART DIAGRAM 11-1

1. INTRODUCTION

1.1 General Notes for Servicing
1.2 General Description
1.3 Features

This manual is intended to be used by the maintenance engineers. It describes areas to be maintained, the detailed installation, the disassembly of optional ADF , and the component replacement procedures as well as the main trouble shooting guides.

Please take your time to read this manual thoroughly to obtain comprehensive knowledge about theDS610CF before serving the unit.

1.1 GENERAL NOTES FOR SERVICING

(1) Before trying to disassemble theDS610CF, make sure the power supply cord of theDS610CF is disconnected from the power outlet. Under any circumstance, do not remove or install the connectors on theDS610CF with the power supply turned ON.

(2) Use caution not to drop small parts or screws inside the unit when disassembling and reassembling. If left inside, they might cause the malfunction of the unit.

(3) Do not pull the connector cable when disconnecting it. Hold the connector.

(4) When carrying the scanning head unit, put it in an anti-static bag.

(5) Keep the document table glass surface always clean. If contaminated, use a dry clean cloth for cleaning.

(6) Use caution not to injure your fingers or hands when disassembling or reassembling the unit.

1.2 GENERAL DESCRIPTION

DS610CF is a fantastic color digital copier with an optional Automatic Document Feeder when connected to a printer. The digital solution makes your reproduction exceedingly clear and sharp compared to regular copy machines. Through auto photo and text separation feature, your photo reproduction is amazingly improved with details and gray scale. TheDS610CF is also easy to use since the control panel on the front looks just like a panel on a regular copier. Users can enjoy copying almost immediately without further learning.

DS610CF is also a scanner when connected to a host computer. With a simple touch of the “Scan” virtual button, the ease-of-use scanning software immediately pops up on your computer screen. Without further leaning, you can get a scan image and link the image to a variety of applications, for example, the image-editing software, the OCR(Optical character recognition) software, the E-mail software, the Fax software, etc. to make your jobs done in just a second.

1.3 COPY FEATURES

(1) A Compact and light weight copier

With few kgs and a small foot print few inches more than an A4 page, DS610CF is easy and convenient to transport and relocate to fit your ever changing requirement.

(2) Ease of Use

The control panel on the front of DS610CF looks like a panel on a regular copier. The operating steps follow the same procedure as other regular copier.

(3) Auto photo and text separation

Incorporated with the dialogic processor, a mixed photo and text original could reproduce a clearer detail of both the photo and the text.

(4) Clear image of three dimensional object

Based on the CCD technology, DS610CF could break through the limit of two dimensions, and produce a clear image for a three dimensional object.

(5) Reduction or enlargement from 25% to 400%

DS310F provides reduction or enlargement for your original from 25% to 400%. You can access the feature through the preset ratio or in 1% increment.

(6) Auto Duplication

With this command, you no longer need to repeatedly copy the same small picture at different paper.

(7) A full color scanner if connects to a host computer

WhenDS610CF is connected to a host computer and a printer, it is possessed of a full color scanning capability.

(8) Auto paper feeding

With Automatic Document Feeder (ADF) , DS610CF is capable to fast make color or B/W copy.

2. SPECIFICATION

2.1 Basic Specification

2.1 BASIC SPECIFICATION

Product Name:	DS610CF
Type:	Flatbed or ADF platform
Optical Resolution	600 x 600 dpi
Enhanced Resolution	9600 x 9600 dpi
Scanning (Copying) Size	Max. 8.5” x 14”
Interface	IEEE 1284 (bi-directional) ECP/EPP/SPP
Copy Feature	Zooming From 25%~400% Auto Zooming Auto Background Removal Auto Photo, Text Separation Auto Duplication
Power Consumption	< 20 watts
Photoelectric device	Color CCD
Light Source	Cold Cathode Fluorescent Lamp
Push Button	Equipped
LED	1 LED (power)
Rated Voltage	AC100-240 V
Frequency Range	50-60Hz
Physical Dimension	477 mm x 356 mm x 98 mm(WxHxD)
Weight	3.9 kg (8.5 lbs)

2.2 ADF SPECIFICATION

Dimension	448 x 290 x 192 mm
Weight	1.4 kgs
Speed	10 PPM(page per minute) (mono mode)
Paper tray capacity	25 pages
Maximum paper size Flatbed or ADF	Legal size (8.5” x 14”)
Minimum paper size ADF	4.5” x 5.5”
Document thickness	0.07 ~ 0.15 mm

3. UNPACKING, INSTALLATION, AND TRANSPORTATION

3.1 Precautions of Installation
3.2 Unpacking Procedure
3.3 Installation
3.4 Placing the Original
3.5 Transportation

3.1 PRECAUTIONS OF INSTALLATION

Pay attention to the following matters before unpacking and installation.

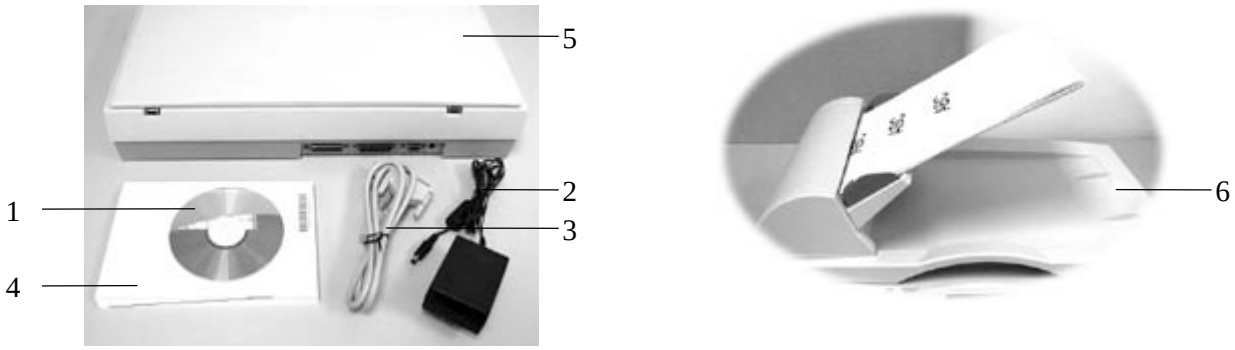
- Do not install in a place where vibration may occur.
- Keep the DS610CF out of direct sunlight. Do not install near a heat source.
- Do not place the DS610CF around materials which shut off the circulation of air.
- Do not install in a humid or dusty place.
- Use care not to scratch the glass surface of theDS610CF or the document holding pad with a clip or staple.
- Do not use the wall socket with connecting devices which may generate noise, for example, air-conditioner, etc.
- Use a suitable AC power source.
- Place the DS610CF on a level surface.

3.2 UNPACKING PROCEDURE

Unpack the DS610CF according to the following procedure.

- Remove the packing material.
- Remove the DS610CF from the shipping container.
- Remove the DS610CF from the PVC bag.
- Check the items by referring to Figure 3.1.
- For any missing items, please contact your nearest dealer or distributor.

Note: Keep all the packing material in case you may need to return the DS610CF.



1. Software CD
2. Power Adapter
3. One Parallel Cable
4. Quick Guide
5. DS310F main unit
6. Optional ADF

Figure 3.1 Package Contents

3.3 INSTALLATION

(1). Unlocking theDS610CF

Before you use DS610CF, be sure to unlock it by moving the lock switch under the DS610CF to the "Unlock" position (See the following figure). The lock switch is designed to protect the scanning head in case of any damage during shipment.

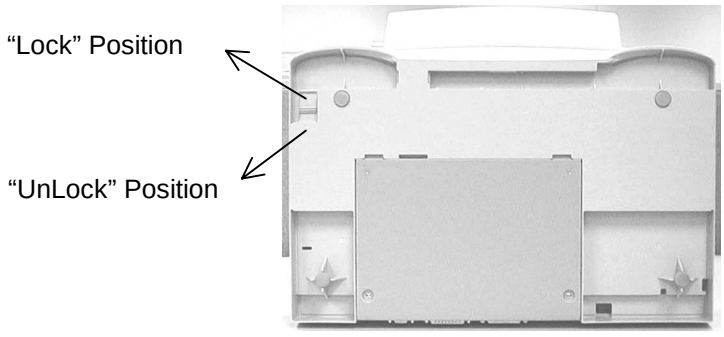


Figure 3.2 Unlock theDS610CF

Note: If you need to transport the DS610CF, be sure to first move the lock switch to the "Lock" position to prevent any damage during transportation.

(2). Connecting to a printer

a) Plug one end of the printer cable to the port marked “to printer” on the back of your DS610CF.

b) Plug the other end to your printer. (See the Figure 3.3)

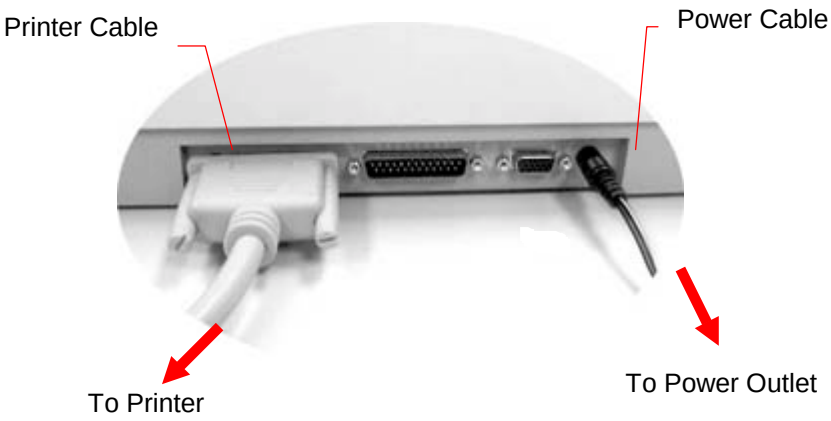


Figure 3.3 Connecting to a laser printer

(3). Connecting to Power

a) Plug the small end of the power cable(supplied) to the power jack on the back of your DS610CF.

b) Plug the large end of the power cable to the power outlet.

c) Turn on your printer(See the above figure).

(4). Connecting to a host computer

a) Remove the printer cable from the parallel port of your computer and plug it into the port marked “To printer” on the back of the DS610CF. Leave the other end connected to your printer.

b) Plug one end of the supplied parallel cable to the port marked “To PC Parallel” on the back of the DS610CF and plug the other end into your PC where the printer port cable was plugging in.

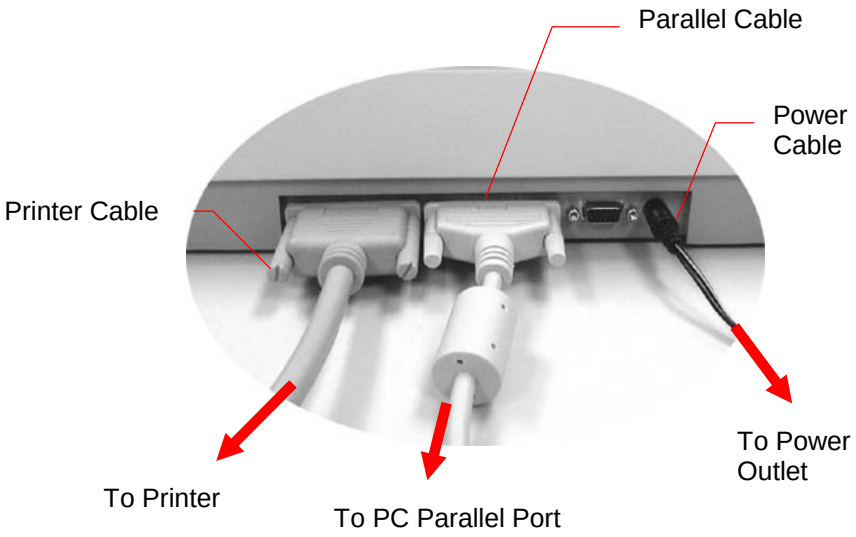


Figure 3.5DS610CF cable connection

3.4 PLACING THE ORIGINAL

(1) Place your original face down on the document glass.

(2) Observe that the upper-left corner (front page) of your original is placed beneath the home position mark.

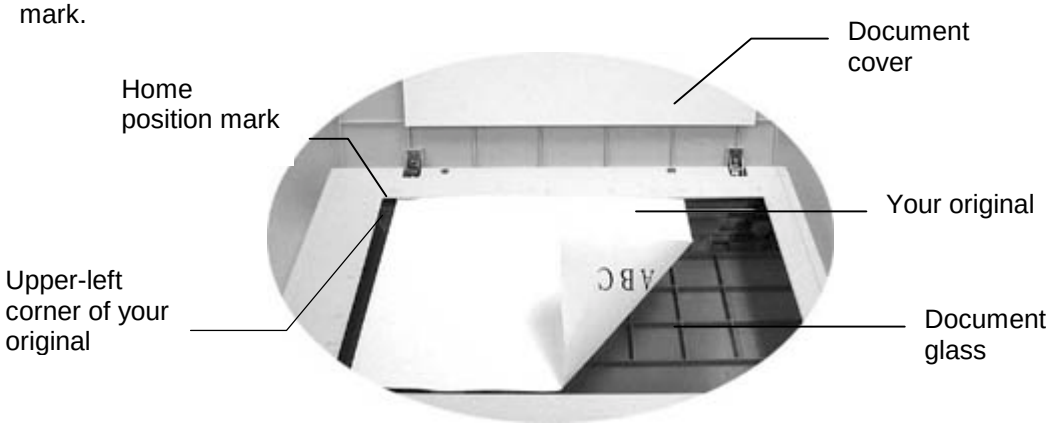


Figure 3.4 Placing the original

3.5 TRANSPORTATION

To move the DS610CF from where it is installed, for repair or any other reason, make sure to observe the following conditions:

(1) Turn off the power of the DS610CF.

If the scanning head is located at a place other than the home position, turn the DS610CF on to return the scanning head to the home position. Before making sure the scanning head is returned to the home position, turn the power supply off.

(2) Move the lock switch to the “lock” position.

(3) Remove the power and printer cables.

(4) Put the DS610CF in the packing case with the packing material.

4. PARTS IDENTIFICATION

4.1 External View

4.1 EXTERNAL VIEW

4.1.1 FRONT VIEW

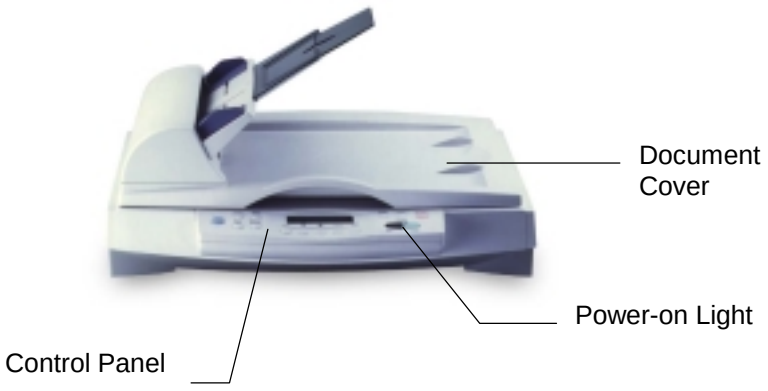


Figure 4.1 Front view

(1) Document cover

Used to hold the document.

(2) Document glass

Document are set on the glass surface.

(3) Scanning head

The major component used to scan the document on the document glass.

(4) Power-on light
Turns on when the DS610CF is power on.

4.1.2 REAR VIEW

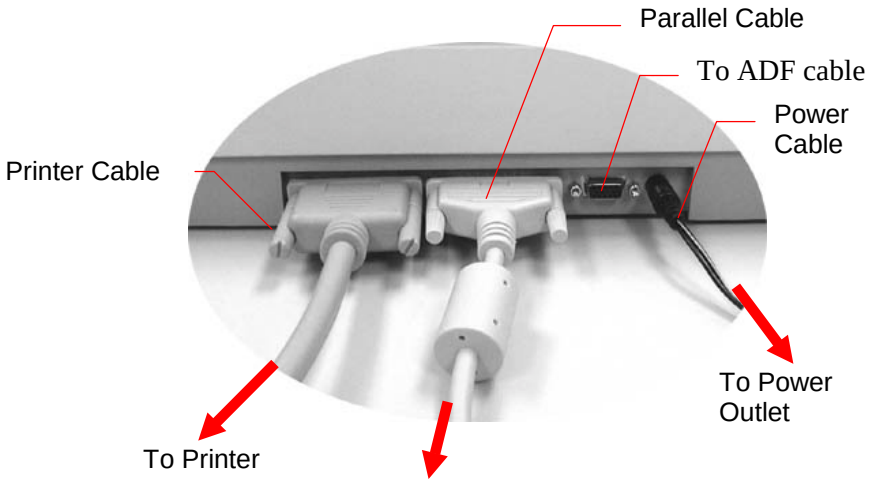


Figure 4.2 Rear view

(1) Power jack

Used to connect power cable.

(2) “To PC Parallel” port

Used to connect parallel cable(supplied).

(3) “To Printer” port

Used to connect printer cable.

(4) “To ADF” port

Used to connect ADF cable

4.1.3 TOP VIEW

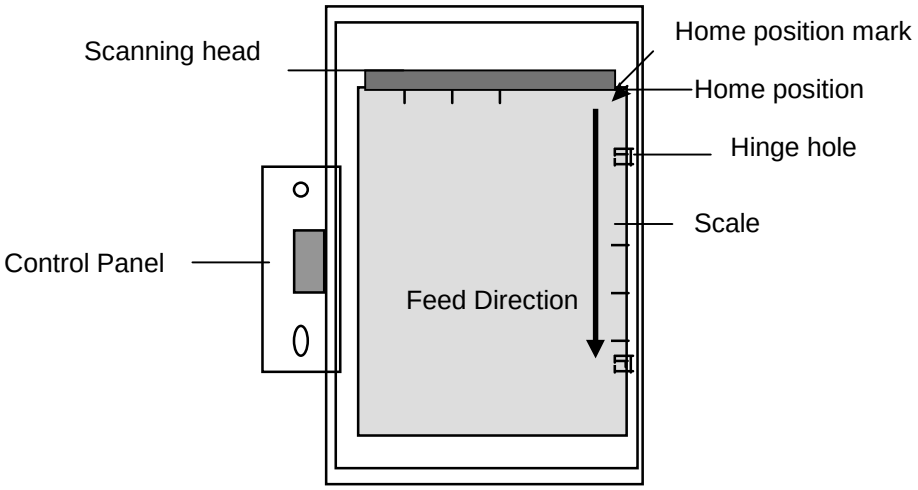


Figure 4.3 Top view

(1) Home position

Scanning begins at this position. The scanning origin and scan area on the computer display depends on the software to be used.

(2) Feed direction

The direction in which the scanning head moves.

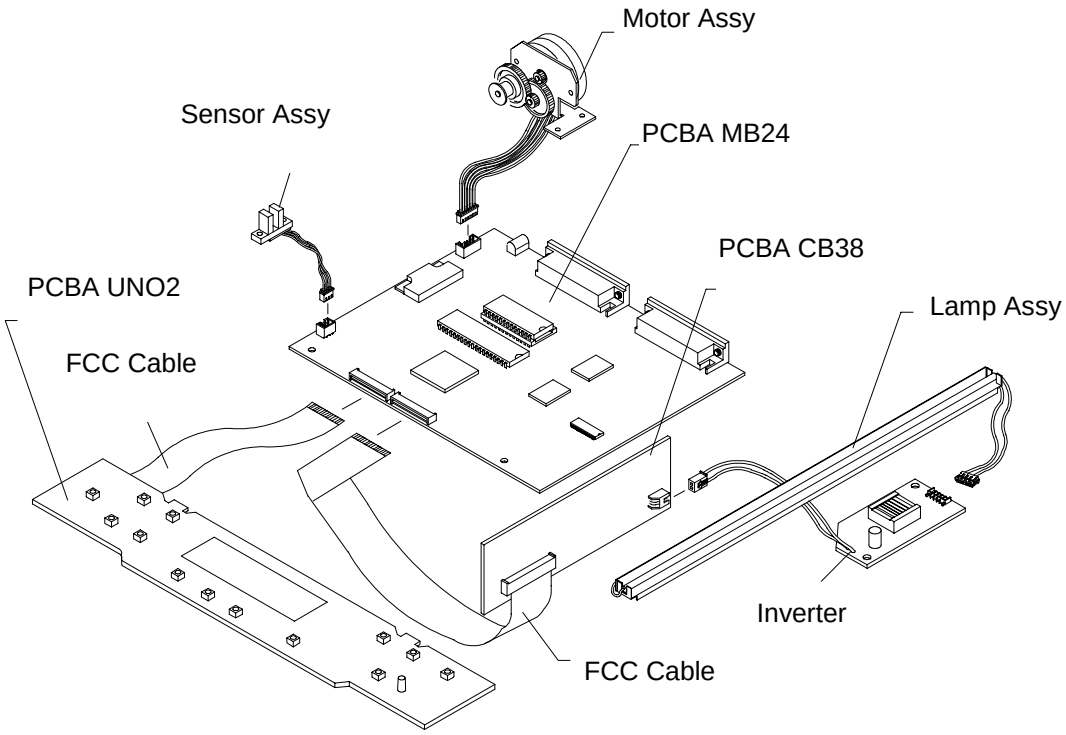
(3) Scale

The document glass provides some fixed sizes, for example, U.S. legal, Letter, A4, B5, A5, and A6 of a document on the glass.

(4) Hinge hole

When installing the document cover or an optional unit, insert the hinge into this hole.

4.1.4 WIRING COMPONENTS EXTERNAL VIEW



5. THEORY OF OPERATION

5.1 INTRODUCTION

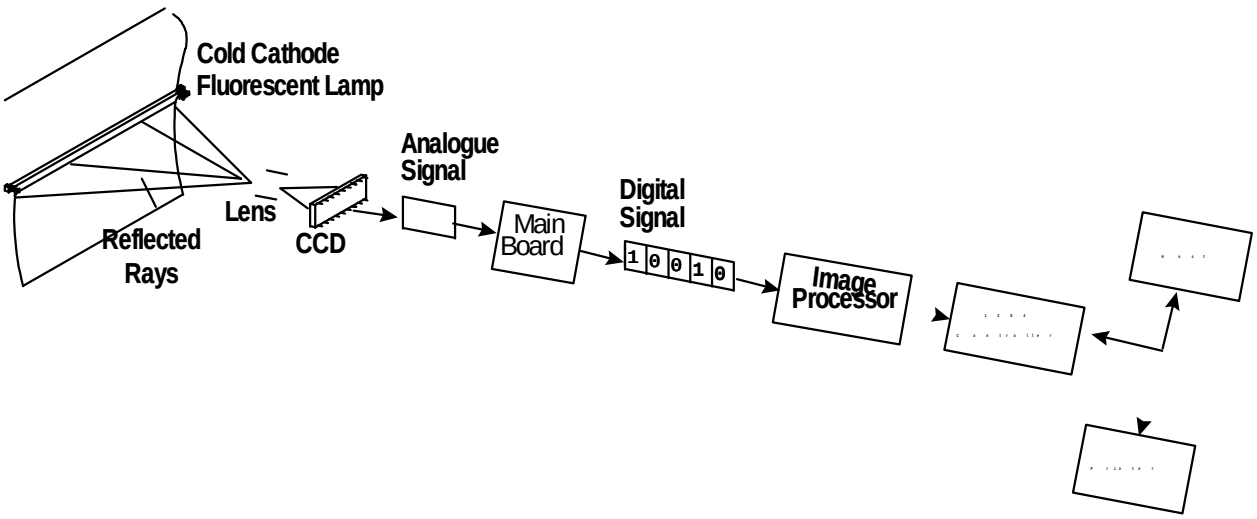


Figure 5.1 Theory of Operation

The reflected rays of the your original as shown in the above Figure 5.1 pass through the lens and creates an image on the CCD (Charged Coupled Device). Then, according to the different light intensity perceived by the CCD, the CCD will transfer these data into a series of analog signals to the main board, where the signals are turned into digital signals. These digital signals flows to the image processor to store into a printer acceptable format then goes to 1284 Controller to transfer to printer or to a host computer.

5.2 MAIN CONTROL UNIT

5.2.1 SYSTEM DIAGRAM

Figure 5.2 shows the system block diagram.

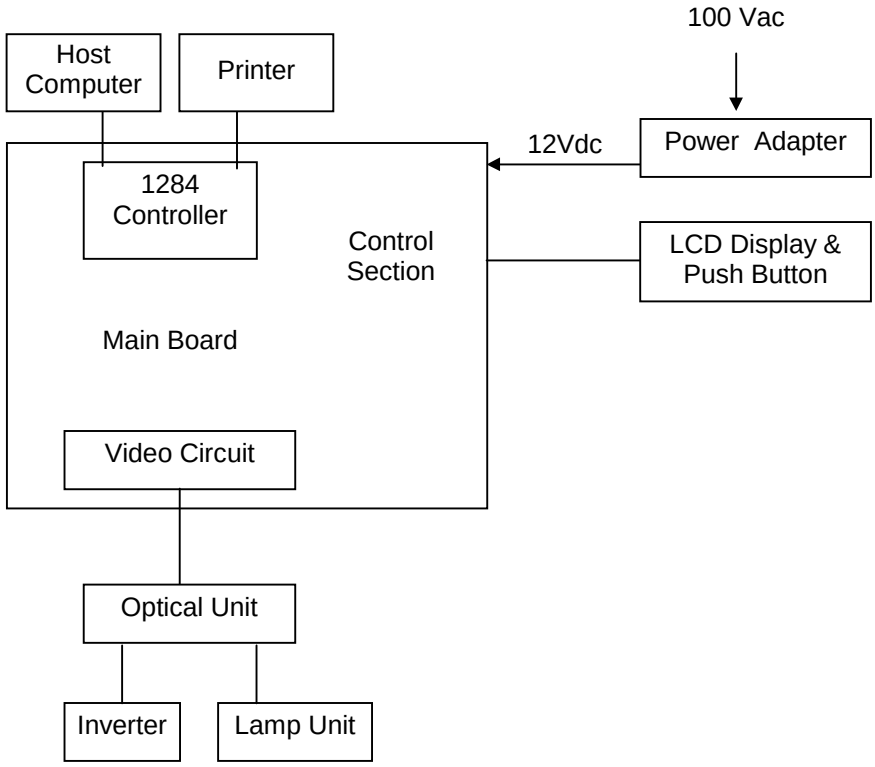


Figure 5.2 System block diagram

5.2.2 MAIN CONTROL CIRCUIT

This DS610CF is controlled by the 80C32. The 80C32 is configured with a 64-KB external ROM program area, a 256-BYTE internal RAM work area, a 64-KB external RAM work area, 2 timer / counters, 4 I/O ports, 2 external interrupts, and 2 internal interrupts for 2 internal timer / counters.

Address Maps:

- ROM program area:

0000 FFFF	64KB Program

- Internal RAM working area:

00 FF	256-byte Internal Registers

- External RAM working area:

0000 7FFF	System Memory 32KB
2000 2FFF	ASIC Control Register 8KB
2800 28FF	1284 Controller
2C00 2CFF	Image Processor

5.2.3 VIDEO CIRCUIT:

The video circuit of this DS610CF includes: 1. CCD driving circuit, 2. CCD signal processing circuit.

1. CCD Driving Circuit

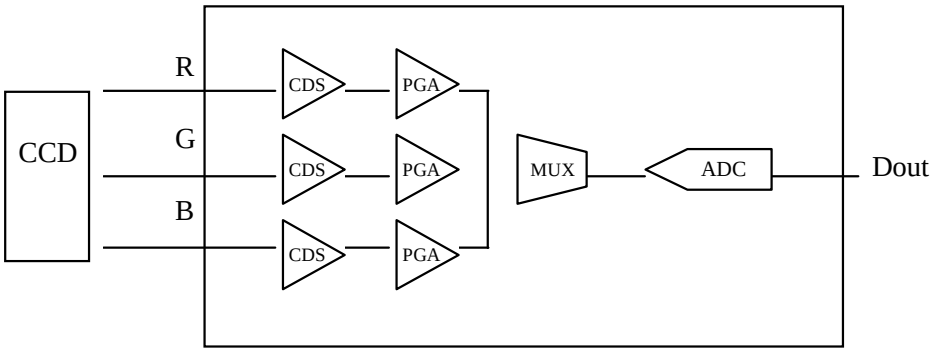
The CCD driving circuit is used to generate correct signals to the CCD, so that the CCD may generate the correct image data.

Signals for CCD:

Pin Assignment for CCD cable

Pin No.	Name	Function
1	A.G.	Analog Ground
2	VOR	CCD Red Channel Output Signal
3	VOG	CCD Green Channel Output Signal
4	VOB	CCD Blue Channel Output Signal
5	A.G.	Analog Ground
6	12Vc	CCD Power Supply
7	12Vc	CCD Power Supply
8	D.G.	Digital Ground
9	RS	CCD Reset Gate
10	CP	Clamp Gate
11	PHI1-	CCD Clock Phase
12	PHI2-	CCD Clock Phase
13	SHR	CCD Red Channel Shift Gate
14	SHG	CCD Green Channel Shift Gate
15	SHB	CCD Blue Channel Shift Gate
16	SH	SHIFT Gate
17	VCC	Digital 5V Power Supply
18	12VI	Inverter Power Supply
19	12VI	Inverter Power Supply
20	I.G.	Inverter Ground
21	I.G	Inverter Ground
22	I.G	Inverter Ground

2. CCD signal processing circuit



CCD Signal Processor

The CCD signal processor includes all the necessary circuitry to perform three-channel conditioning and sampling. The signal chain consists of three-channel correlated double sampling (CDS) and programmable gain adjustment of the CCD output (PGA) is a 10 bit analog to digital connector (ADC) quantizes the analog signal.

5.2.4 LCD MODULE CIRCUIT

The circuit for LCD module controls the function of the entire module including the LCD Display, the push button on the Control Panel, and the Ready LED.

Pin assignment of LCD module

Pin No.	Name	Function
1	XAD0	80C32 Address/Data Bus bit 0
2	XAD1	80C32 Address/Data Bus bit 1
3	D.G.	Digital Ground
4	XAD2	80C32 Address/Data Bus bit 2
5	XAD3	80C32 Address/Data Bus bit 3
6	D.G.	Digital Ground
7	XAD4	80C32 Address/Data Bus bit 4
8	XAD5	80C32 Address/Data Bus bit 5
9	D.G.	Digital Ground
10	XAD6	80C32 Address/Data Bus bit 6
11	XAD7	80C32 Address/Data Bus bit 7
12	VCC	Digital Power Supply
13	VCC	Digital Power Supply
14	T1	LCD Read/Write Select Signal
15	D.G.	Digital Ground
16	OCS5	LCD Chip Select Signal
17	RS	LCD Register Select Signal
18	D.G.	Digital Ground
19	IOCS4	Push button/LED Control Port
20	D.G.	Digital Ground
21	IOCS3	Push Button Read Port
22	D.G	Digital Ground

5.2.5 SENSOR INPUT

The sensor input includes home position sensor.

Home position sensor

The home position of the carrier motor is detected by photo sensor. The photo transistor transmission to the photo sensor receiver circuit is shown below .

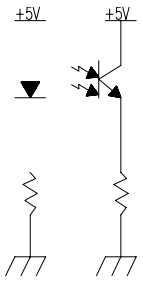
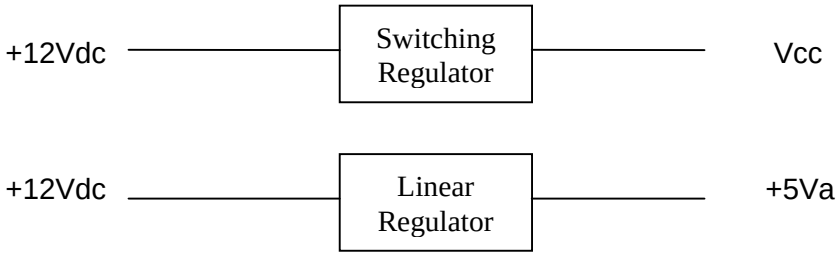


Figure 5.3 Home position sensor

The home position is detected when the carrier passes between the LED and the photo transistor.

5.2.6 SUB POWER SUPPLY CIRCUIT

The sub power supply circuit is provided for the internal analog circuit. Input is 12V and output is Vcc and +5Va. The circuit configuration is shown below:



The sub power supply is used for: A/D, and logic circuits.

5.2.7 POWER SUPPLY

In this system, there is only one type of power supply. Please see Table 5.1 for details.

Table 5.1 Power Adapter

Type / Characteristic	Wall-mount
Input voltage range	200-240V
Input current(max.)	0.5A (rms)
Input frequency	47-63Hz
Max. in-rush current(@115VAC, cold start)	30A
Output voltage	+12Vdc
Min. load current	0.0A
Max. load current	1.25A
Total Power	15W

6. TROUBLESHOOTING

6.1 Troubleshooting Flowchart
6.2 Tables

This section is given to locate and resolve the causes of troubles so as the DS610CF is always in good working condition. The trouble modes, relevant units and maintenance methods are described below.

When a problem occurs, troubleshoot the problem according to the symptoms it shows.

Check the following first:

1. Is anything operating improperly?
2. Does the problem recur, or is it regular?

Figure 6.1 to Figure 6.3 show the troubleshooting flowcharts.

The causes and maintenance methods for each failure mode are described in Table 6.1 through 6.7

6.1 TROUBLESHOOTING FLOWCHART

6.1.1 POWER ON TODS610CF READY

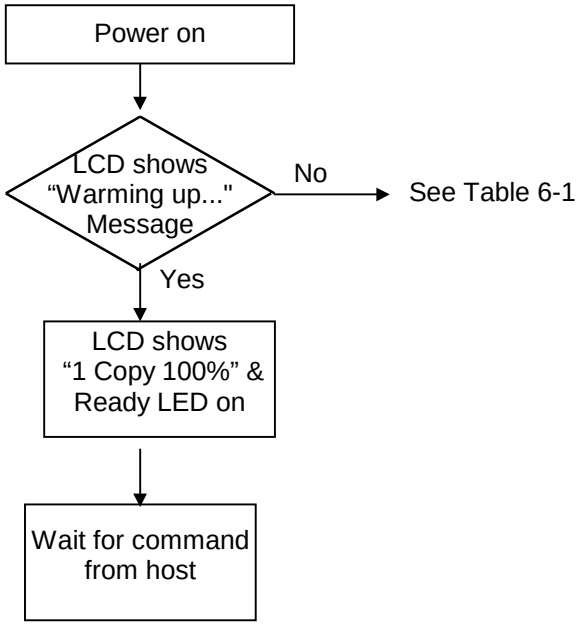


Figure 6.1 Power on to DS610CF ready

6.1.2 COPIER OPERATION

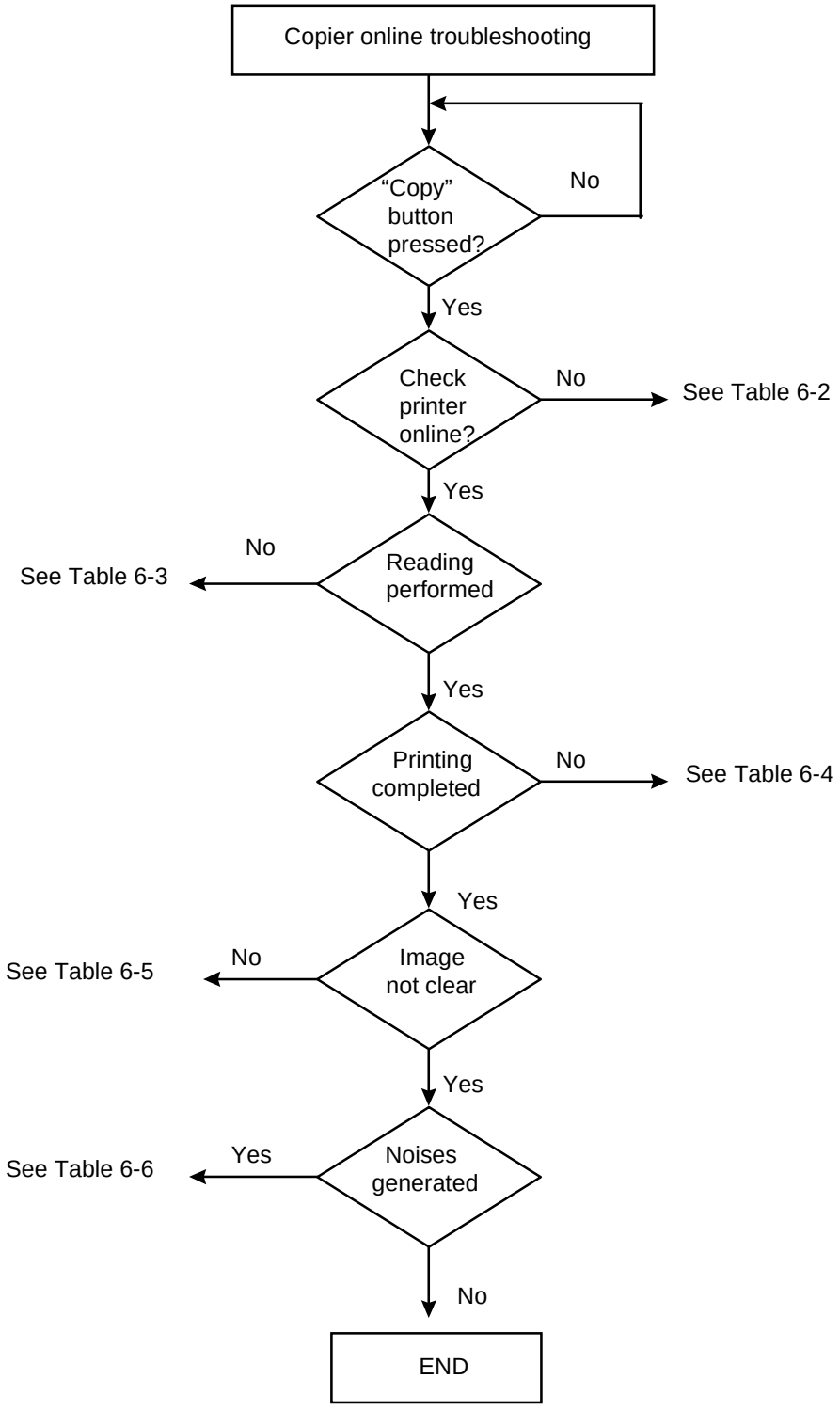


Figure 6.2 Copier operation flowchart

6.1.3 CONTORL PANEL OPERATION

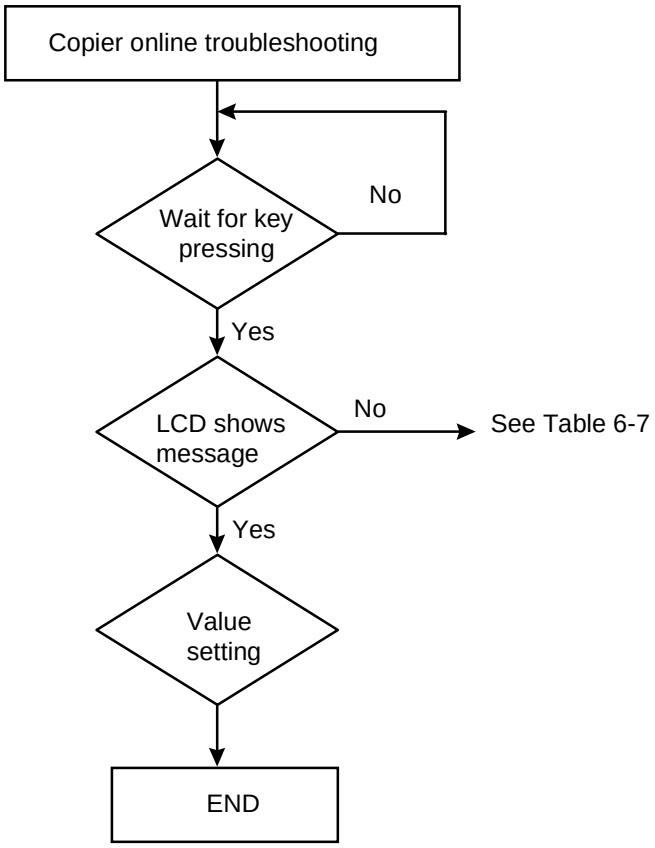


Figure 6.3 Control panel operation

6.2 TABLES

The following tables provide detailed troubleshooting information.

Table 6.1	The Ready LED does not light up or the LCD does not display.
Table 6.2	Printer does not react.
Table 6.3	Optical path dirty or hardware problem.
Table 6.4	Printer does not print.
Table 6.5	Image not clear.
Table 6.6	Noise generated.
Table 6.7	LCD does not show message after command.

6.2.1 LCD DOES NOT DISPLAY

Table 6.1

Cause	Relevant Unit	Check Method	Maintenance Method
Unplugged from outlet	None	Visual check	Insert the AC plug into the outlet
AC power unplugged from unit	None	Visual check	Insert the AC power adapter cable into the unit
AC voltage failure	None	AC outlet voltage check	None
Power adapter output voltage failure	Power unit	Output voltage (+12v) check	Replace the power unit
PCB failure	Main control PCB or the LED board	Tester check (+12V, GND)	Remove the cause or replace the PCB
LCD module main board connection failure	LCD module main board	Visual check	Plug the connector and secure it firmly

6.2.2 PRINTER DOES NOT REACT

Table 6.2

Cause	Relevant Unit	Check Method	Maintenance Method
Printer cable failure	Printer cable	Visual check	Secure printer cable firmly or replace the printer cable
Printer link failure	Main PCB	Visual check	Replace the PCB
	Printer paper jam	Visual check	Remove paper
	Printer paper empty	Visual check	Insert paper
	Printer problem	Visual check	See printer manual
	Printer busy	Visual check	Wait till printer ready

6.2.3 READING IS NOT PERFORMED

Table 6.3

Cause	Relevant Unit	Check Method	Maintenance Method
Scanner cable failure	Scanner cable	Visual check	Attach the scanner cable
Scanner link failure	Main PCB	Visual check	Replace the PCB

6.2.4 PRINTER DOES NOT PRINT

Table 6-4

Cause	Relevant Unit	Check Method	Maintenance Method
Printer does not has “PCL” language	Printer	Visual check	Change “PCL” emulation printer
Paper size incorrect	Paper tray	Visual check	Replace paper tray
Printer problem		Visual check	Check printer

6.2.5 IMAGE UNCLEAR

Table 6-5

Cause	Relevant Unit	Check Method	Maintenance Method
Lamp too dark	Lamp	Visual check	Replace the lamp
Dirt on flatbed glass	Flatbed glass	Visual check	Clean the flatbed glass with isopropyl alcohol
Printer toner low	Printer toner	Visual check	Check printer toner or replace the toner
Printer memory not enough	Printer	Visual check	Add printer memory

6.2.6 NOISE GENERATED

Table 6-6

Cause	Relevant Unit	Check Method	Maintenance Method
Motor unit failure	Motor unit	Replace the motor unit	Replace the motor
Main control PCB failure	Main control PCB	Replace the main control PCB	Replace the main control PCB
Scanning module failure	Scanning module	Check scanning module shakiness	Replace the scanning module
Dirt on rail	None	Visual check	Clean the rail with oil

6.2.7 LCD DOES NOT SHOW MESSAGE AFTER COMMAND

Table 6-7

Cause	Maintenance method
LCD module cable failure	Attach the LCD module cable and secure it firmly
LCD problem	Replace the LCD module
Push button failure	Replace the LCD module

7. PREVENTIVE MAINTENANCE

7.1 Cleaning

This DS610CF is designed to be free of maintenance. However, it is suggested to perform preventative maintenance in the shorter term either every 6 months or every 60,000 sheets scanning to ensure a consistently optimum performance.

7.1 CLEANING THE DOCUMENT GLASS

There are times when the document cover and document glass is contaminated with ink, toner particles or paper coatings. In this case, the DS610CF will have to be cleaned frequently to ensure the best performance.

Follow the cleaning procedure as below:

(1) Open the document cover.

(2) Dip a clean cloth with non-corrosion solvent like alcohol (purity above 99.5%).

(3) Wipe the document cover and the document glass gently as shown in Figure 7.1 Continue until l the entire document cover and document glass is cleaned and observe that no cleanser remains on the surface.

(4) Close the document cover. YourDS610CF is now ready for use.

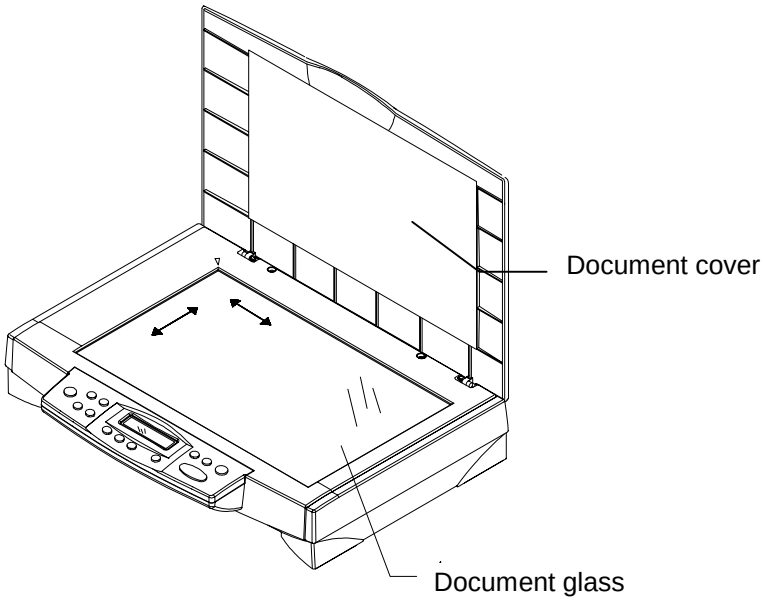


Figure 7.1 Cleaning

8. DISASSEMBLY

8.1 Service Tools
8.2 Lubricants
8.3 Procedure for Disassembly and Reassembly

8.1 SERVICE TOOLS

Table 7.1 describes the maintenance tools necessary for the maintenance of this equipment.

No.	Name	Description
1	Minus screwdriver	Idler pulley module screw
2	Philips screwdriver (magnetic)	Nominal No.2 M3, M4
3	Oil	Shell “Terrace Oil 46”
4	Grease	Shell “Alvania Grease No.2”
5	Alcohol (Isopropyl 91% >)	Cleaning
6	Digital voltmeter	With 0.01 V range
7	Oscilloscope	100 MHz or more with external sweep
8	Blower	Cleaning

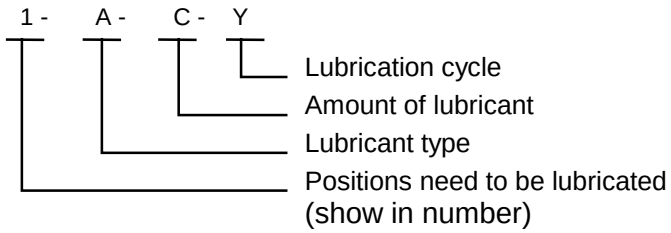
Table 8.1 Maintenance tools

8.2 LUBRICANTS

This section describes the items to check and the places to lubricate when maintenance parts are replaced.

8.2.1 MECHANICAL UNIT LUBRICATION

This lubrication method:



1. Positions need to be lubricated:
   The positions need to be lubricated is indicated in numbers.
2. Lubricant type:
   A: Shell Alvania Grease No. 2
   B: Shell Terrace Oil 46
3. Amount of lubricant:
   C: Coat thinly uniformly
4. Lubrication cycle:
   Y: Every year

Table 8.2 below shows the position to be lubricated.

Lubrication Position	Lubricant Type	Lubricant Amount	Lubrication Cycle	Lubrication Position
1	B	C	Y	Sliding rod
2	A	C	Y	Sliding frame

Table 8.2

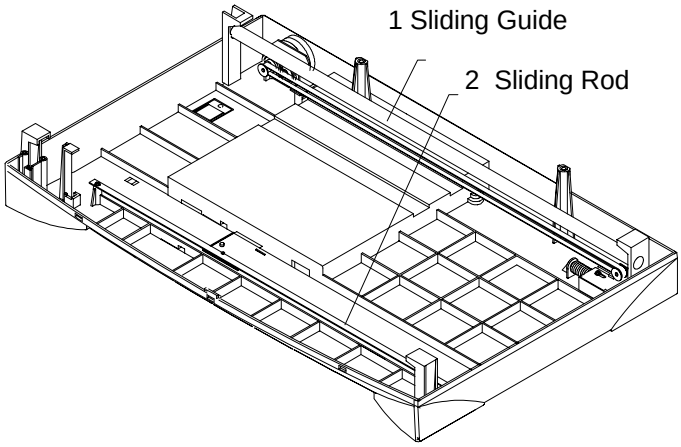


Figure 8.1 Lubricated Position

8.3 PROCEDURE FOR DISASSEMBLY AND REASSEMBLY

8.3.1 NOTES ON DISASSEMBLY

(1) Clean the disassembly and assembly location.

(2) Disconnect the power cable and remove the AC plug from the outlet before disassembly and assembly.

(3) Follow the disassembly and assembly procedures. Never loosen the screws of parts that must not be disassembled.

(4) Store the disassembled parts in a clean place to avoid loss.

(5) After replacement, check the contacts and spare part mounting.

(6) Assemble the parts in reverse order of disassembly procedure.

8.3.2 DOCUMENT COVER

(1) As shown in the figure below, lift the document cover to remove the studs from the hinge holes. The studs are loosely attached to the hinge holes in the purpose to cover your original when it is a few inches high.

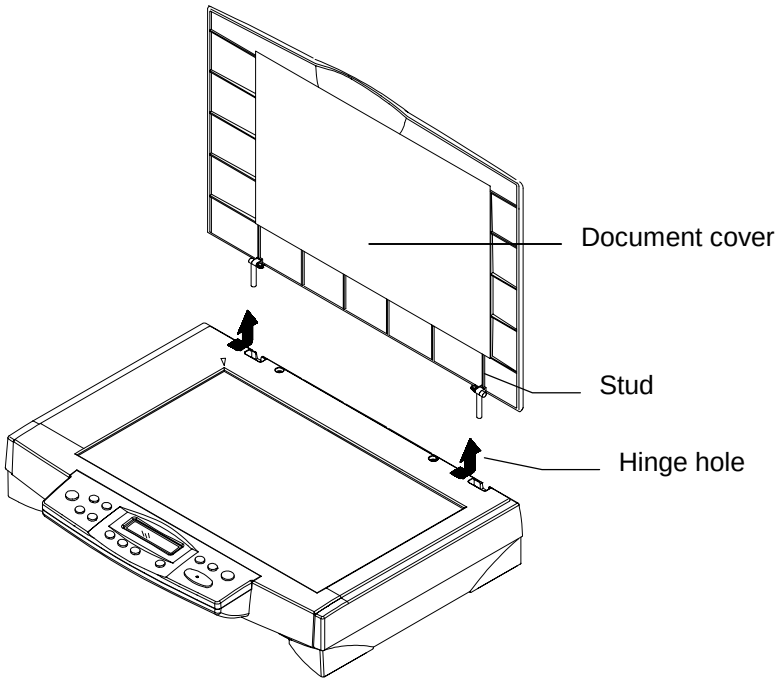


Figure 8.2 Document cover removal

8.3.3 UPPER HOUSING

(1) Remove the document cover as described in the previous section.

(2) As shown in the figure below, loosen the fixing screws with a Philips screwdriver.

(3) Remove the upper housing by lifting it gently.

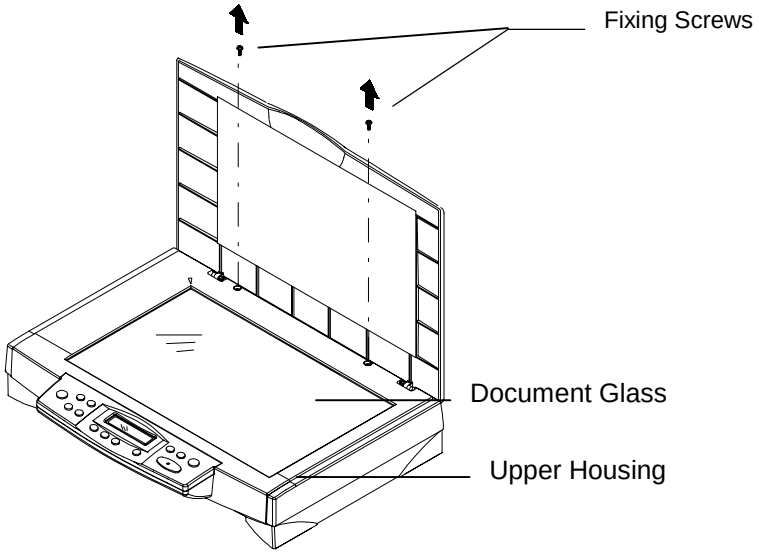


Figure 8.3 Upper housing removal

8.3.4 MAIN CONTROL BOARD ASSEMBLY

(1) Loosen the fixing screws of the metal cover from the bottom housing as shown in the figure below.

(2) Loosen the fixing screws to remove the metal cover.

(3) Loosen the fixing screws of the SCSI connector with proper tool.

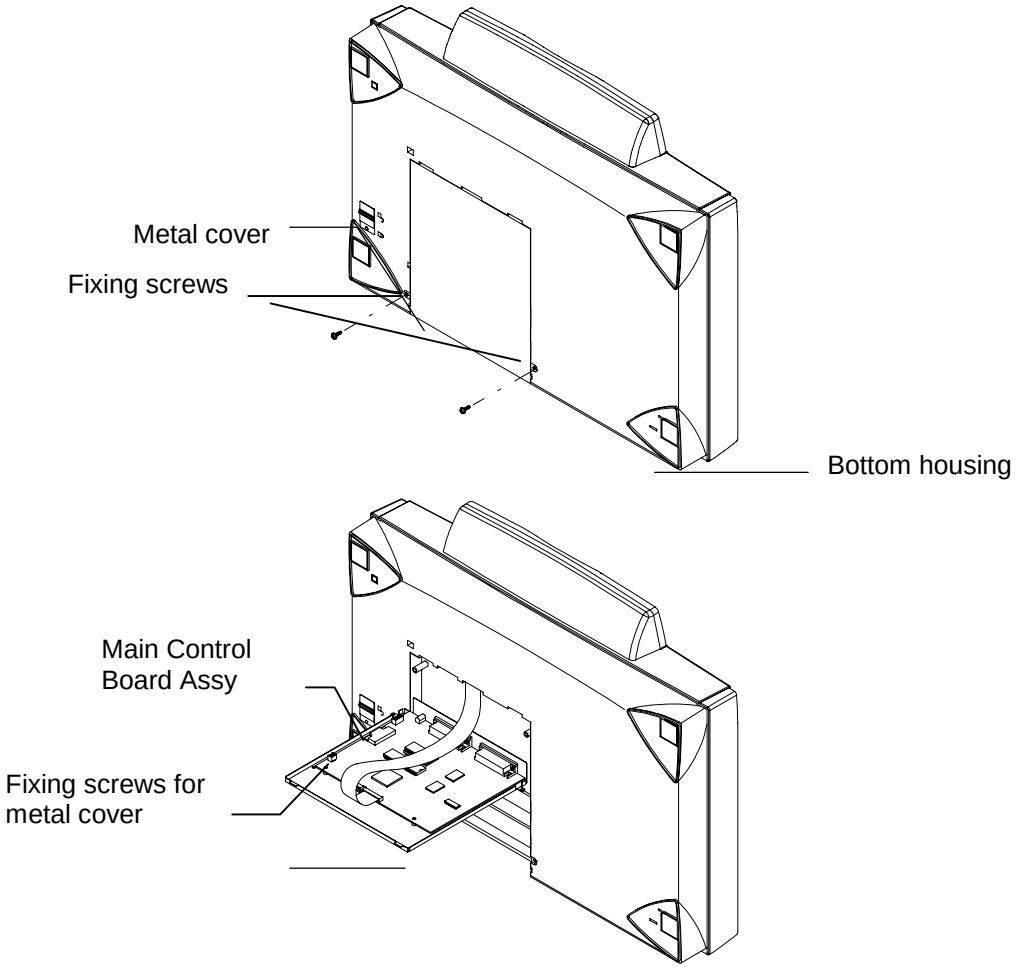


Figure 8.4 Main control PCBA removal

8.3.5 MOTOR BELT

(1) Remove upper housing and main control PCBA. (See section 8.3.4 and 8.3.4)

(2) Disconnect the motor belt by releasing the belt spring as shown in the figure below.

Note:
During the assembling process, keep the belt straight in center line.

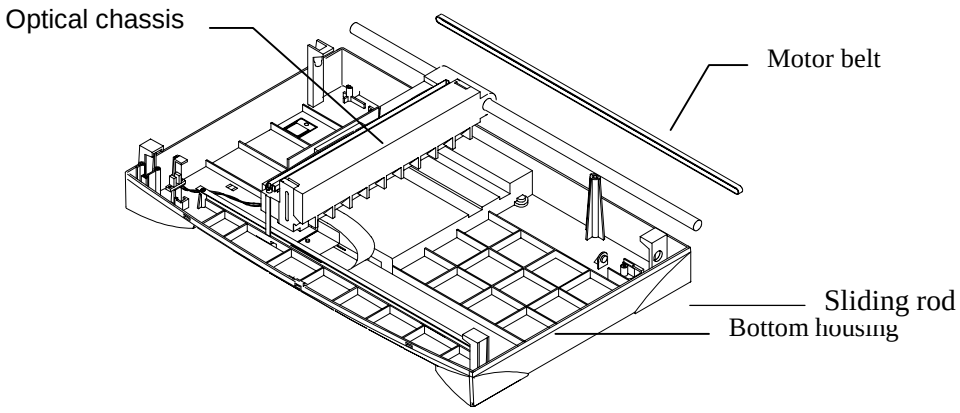


Figure 8.5 Belt removal

8.3.6 OPTICAL CHASSIS

DISASSEMBLING PROCEDURE

(1) Remove the upper housing. (See section 8.3.3)

(2) Remove the main control PCBA. (See section 8.3.4)

(3) Remove the cable clamp for the CCD flat cable.

(4) Disconnect the motor belt by releasing the belt spring. (See section 8.3.5)

(5) Lift the sliding rod and pull it out.

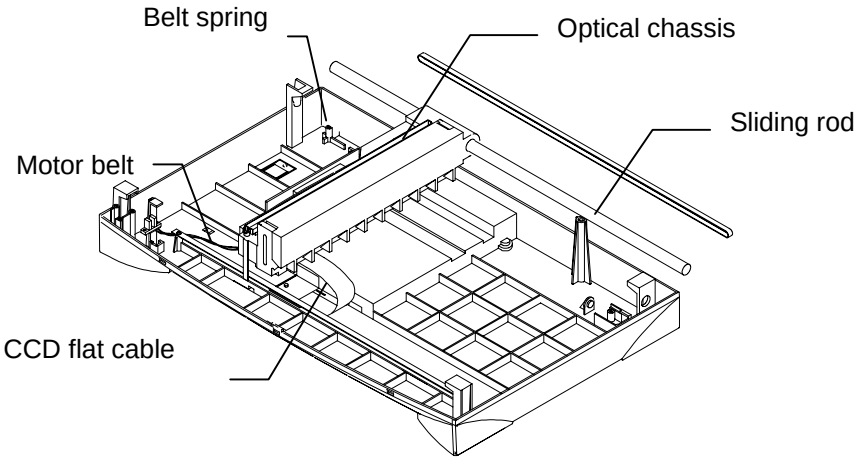


Figure 8.6 Optical chassis removal

Attention: Do not remove the flat cable from the optical chassis.

ASSEMBLING PROCEDURE

Assemble the part in reverse order of the disassembling procedure.

Note:

- Do not remove the flat cable from the optical chassis as the flat cable need special tool to reinstall it.
- Any unauthorized action may cause unexpected result and will therefore not be responsible by the manufacturer.

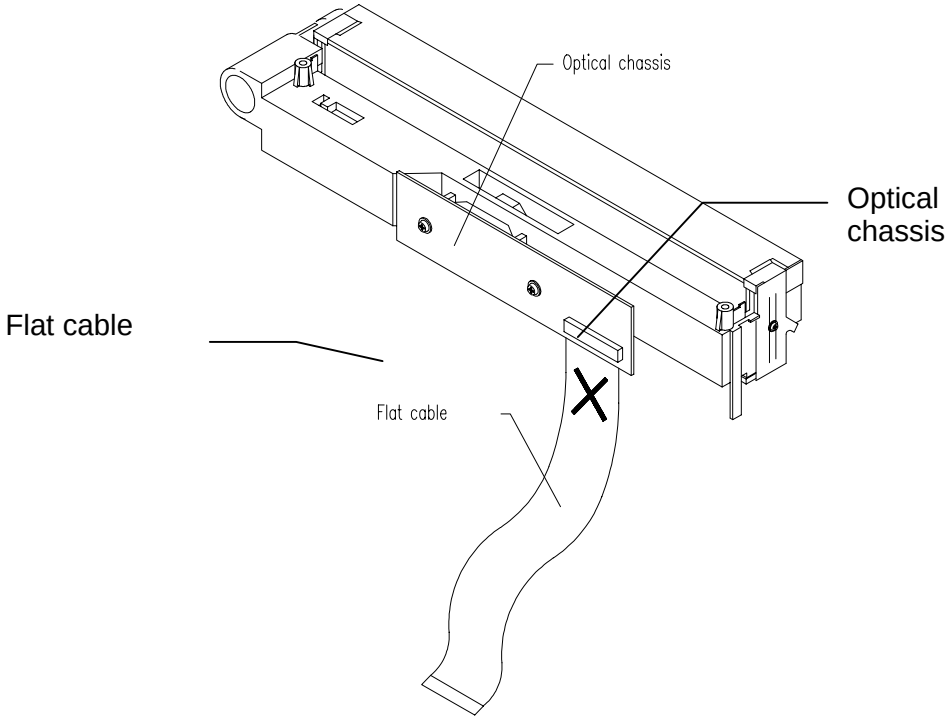


Figure 8.7 The correct direction of the CCD flat cable

8.3.7 CCFL INVERTER PCBA

(1) Remove optical chassis. (See section 8.3.6).

(2) Remove the CCFC inverter PCBA from the optical chassis.

(3) Disconnect the CCFL inverter cable and CCFL inverter PCBA cable.

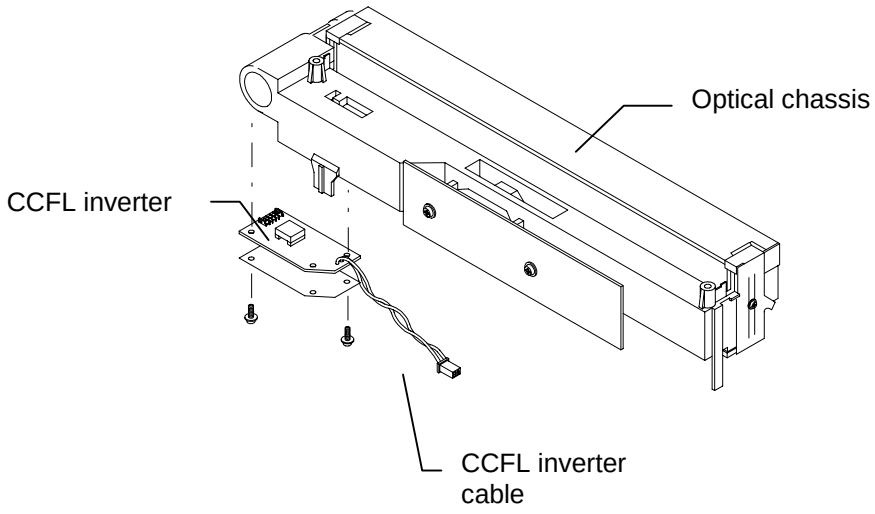


Figure 8.7 CCFC Inverter PCBA removal

8.3.8 LAMP ASSEMBLY

(1) Remove the CCFC inverter (See section 8.3.7)

(2) Loosen the fixing screws of the lamp holder.

(3) Disconnect and replace the old lamp assembly with a new one.

(4) Fix the lamp assembly in place with the fixing screw.

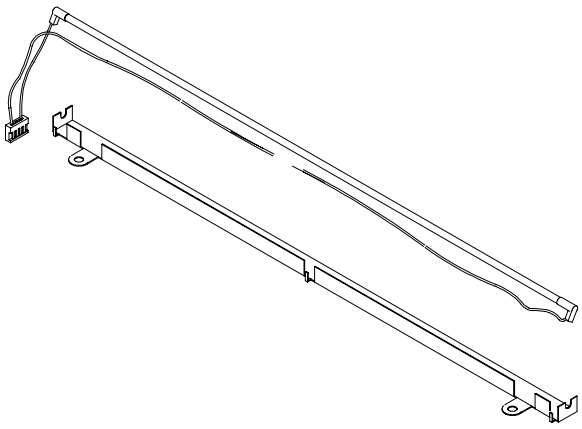


Figure 8.8 Lamp assembly removal

8.3.9 MOTOR UNIT

(1) Remove upper housing. (See section 8.3.3)

(2) Remove the optical chassis and the CCFL inverter PCBA. (See section 8.3.4 and 8.3.7)

(3) Remove the lamp assembly by loosing the fixing screws. (See section 8.3.8)

(4) Loosen the fixing screws as shown in the figure below.

(5) Remove the motor cable connector.

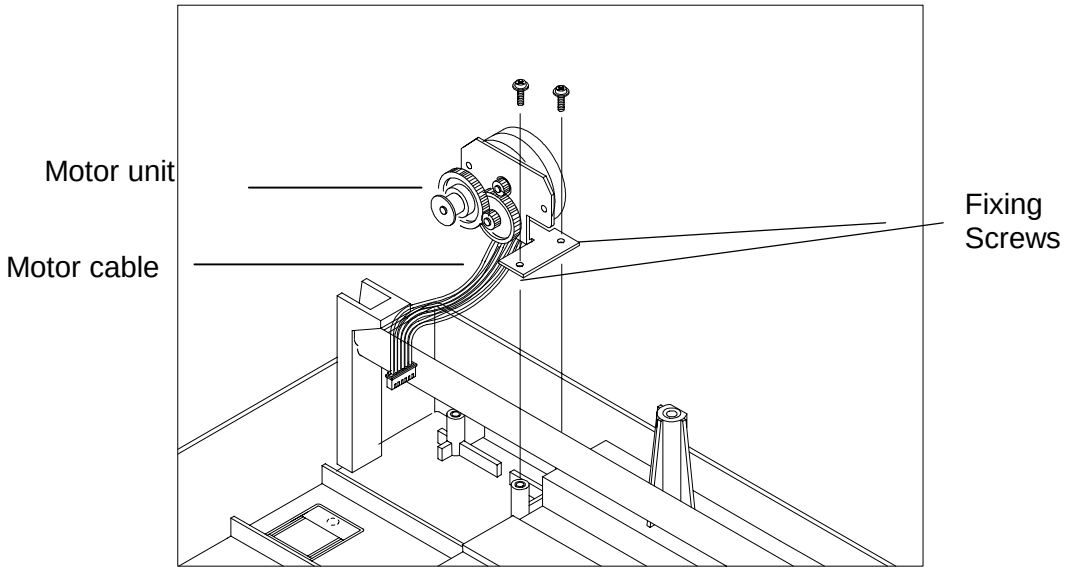
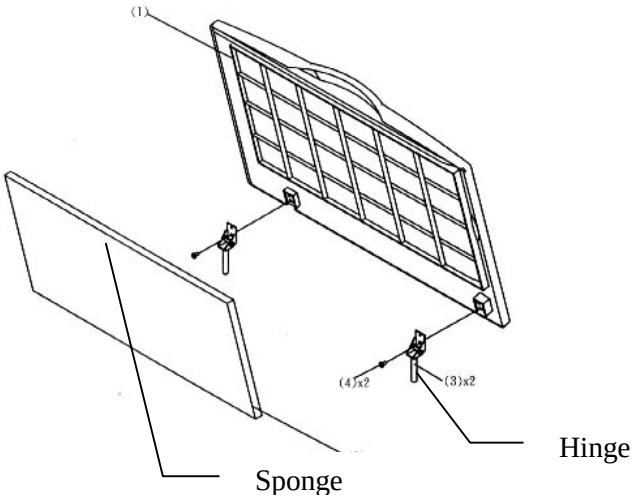


Figure 8.9 Motor unit removal

9. ASSEMBLY

9.1.1 DOCUMENT COVER ASSEMBLY

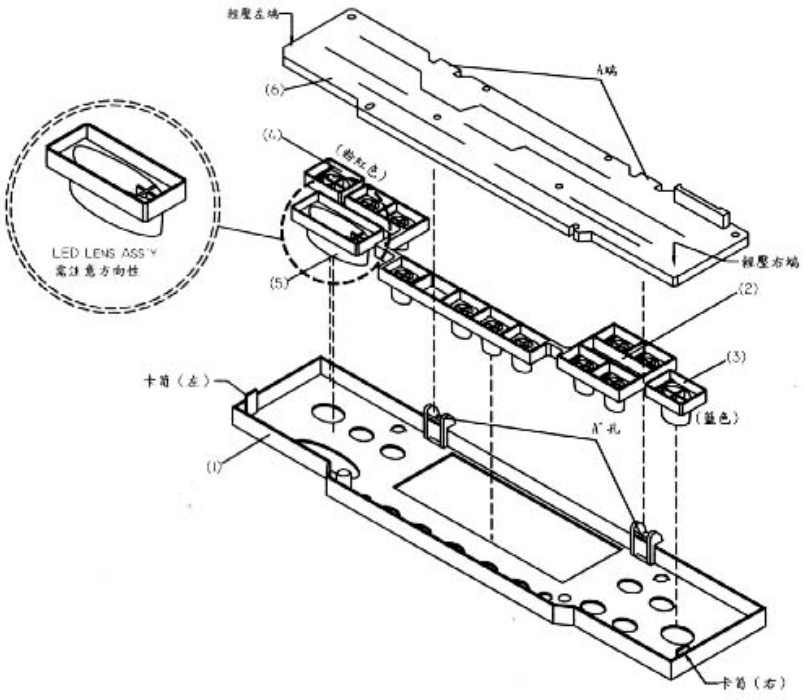
1. Paste the sponge sheet on the document cover by ripping off the glue tape.
2. Fix the hinges by tightening the two pieces of screws.



9.1.2 CONTROL BOARD ASSEMBLY

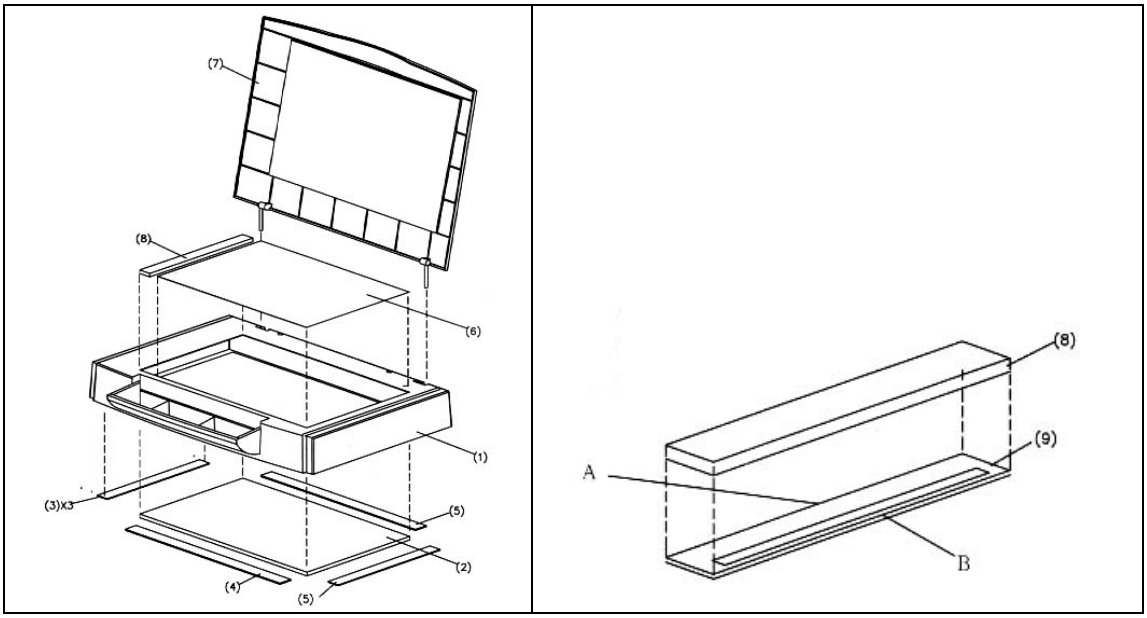
1. Install key nobs (2), (3),(4) and LED lens assembly to the control panel set.

2. Snap PCBA U105 into the control panel set at the lock holes A, and then snap in the right and left sides of the PCBA U105.



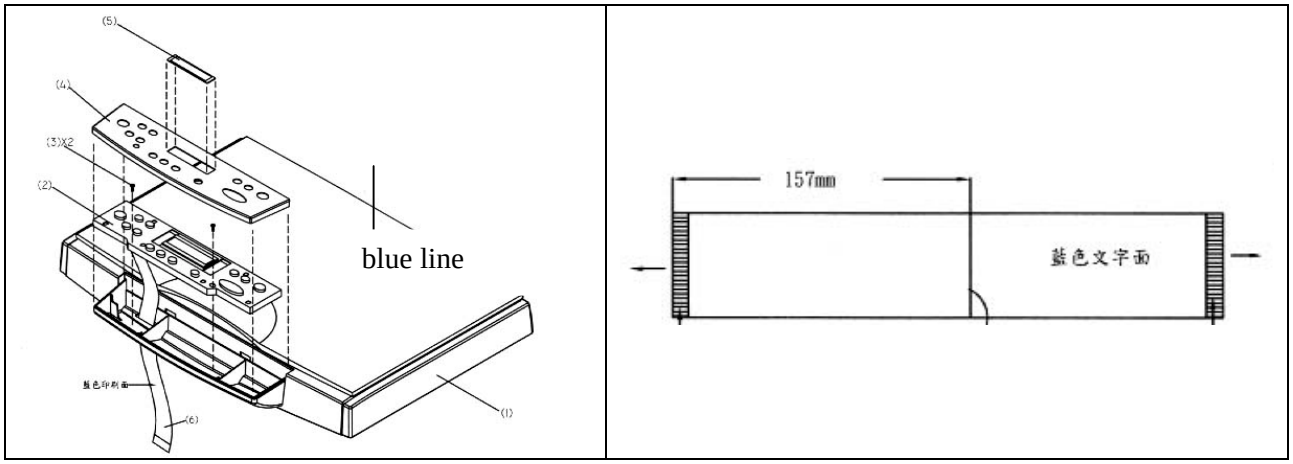
9.1.3 UPPER HOUSING ASSEMBLY (1)

1. Stick double side tape to the upper housing's inner side.
2. Stick glass to the double side tape on the upper housing.
3. Remove the white-side tape of the white board, and then put it on the fixture.
4. Paste the white board on the small glass.
5. Fix the small glass to the upper housing.
6. Place the sheet paper on the upper housing, aligning to the document set mark.
7. Remove the sponge tape on the document cover .
8. Stick the document cover on the sheet paper.



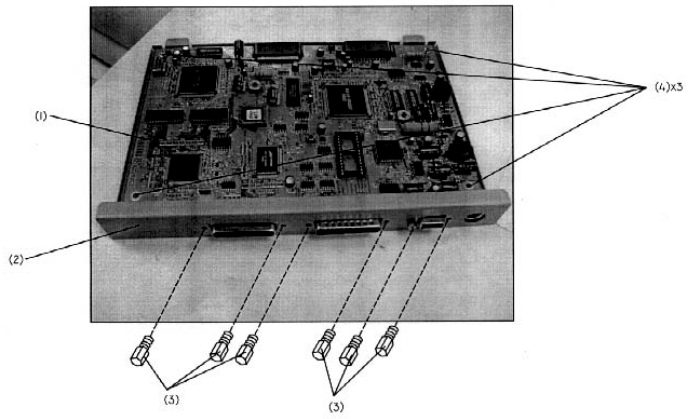
9.1.4 UPPER HOUSING ASSEMBLY (2)

1. Draw a blue line on FFC cable , and then connect it to PCBA UI05, as indicated.
2. Let the FFC cable on the control board assembly pass through the upper housing assembly. Install the control board assembly onto the upper housing assembly by tightening the two screws.
3. Stick the LCD panel on the control panel cover.
4. Remove the LCD ‘s glue tape from the control board assembly.
5. Snap the control board assembly into the upper housing assembly.



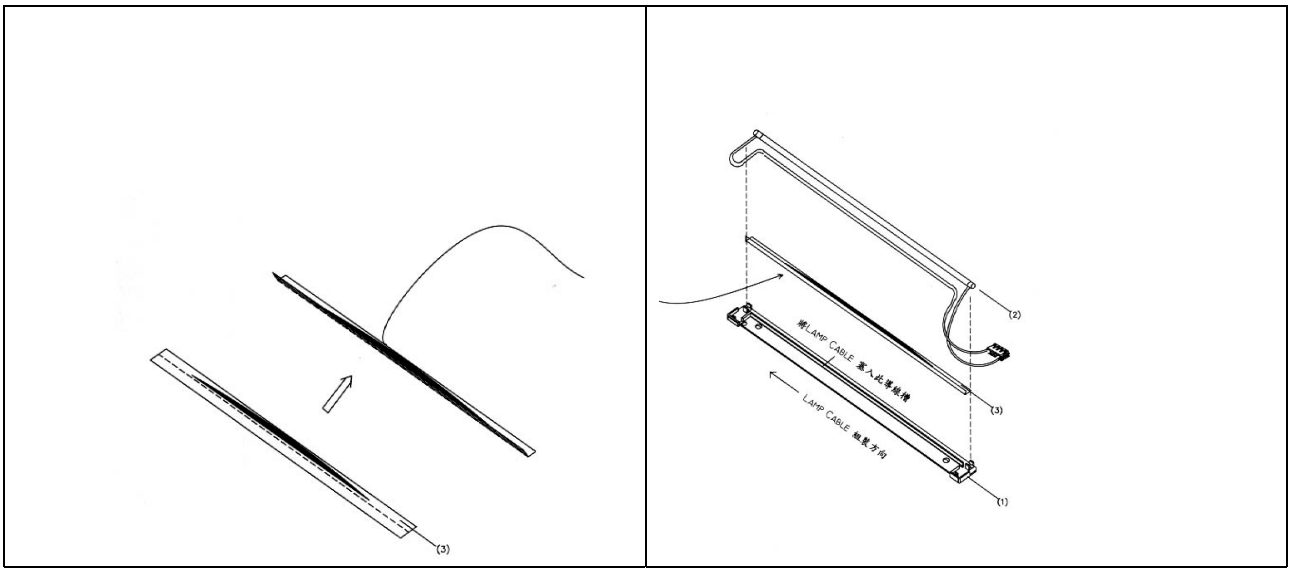
9.1.5 MAIN BOARD ASSEMBLY

1. Install PCBA MB145 on MAIN PCBA MOUNT.
2. Fix all the 3 connectors of PCBA MB145 to MAIN PCBA MOUNT by tightening screws.
3. Install PCBA MB145 to MAIN PCBA MOUNT by tightening screws.



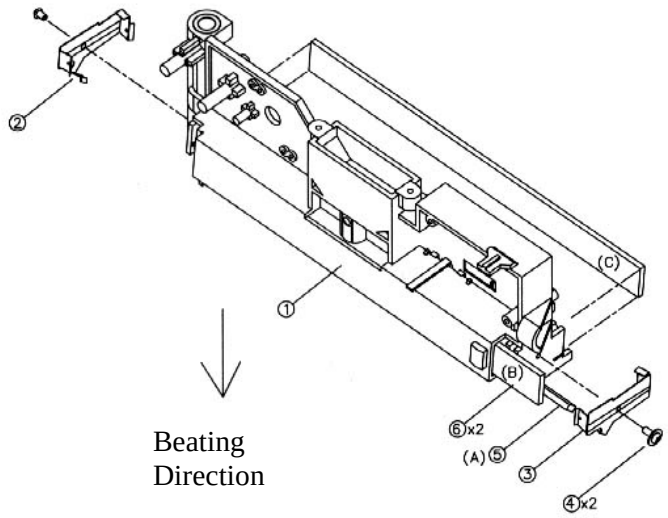
9.1.6 LAMP ASSEMBLY

1. Stick the reflection sheet on the lamp mount.
2. Assemble the lamp to the lamp mount and pinch the lamp cable into the notch of the lamp mount.



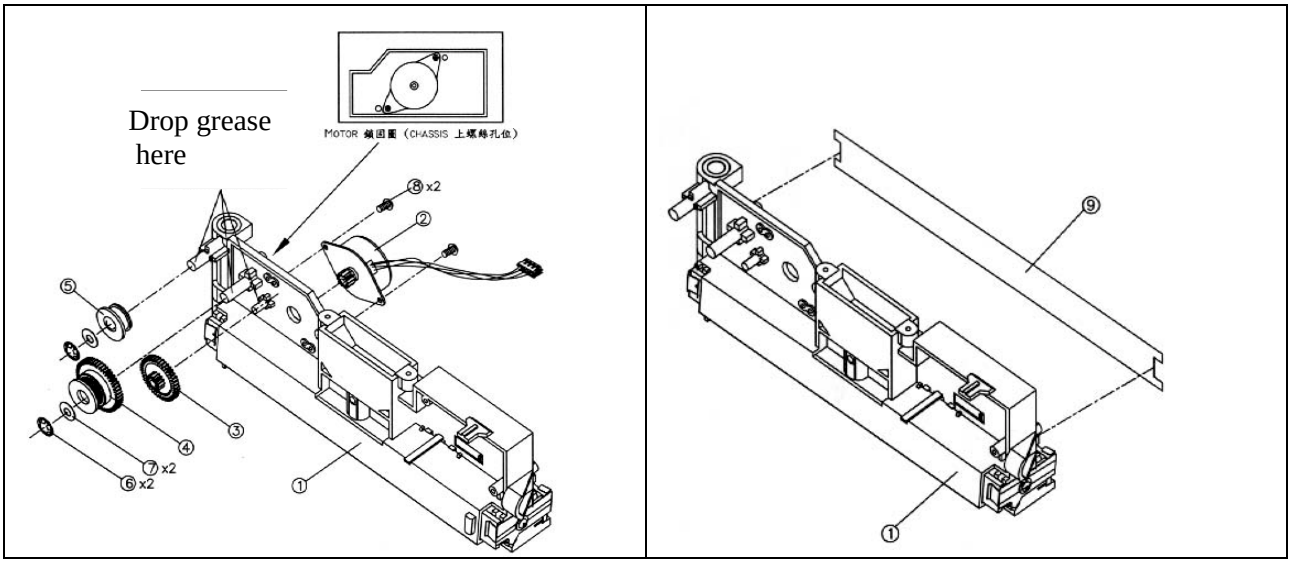
9.1.7 OPTICAL ASSEMBLY (1)

1. Fix the left mirror clamp on the chassis by tightening screws.
2. Remove the mirror's protection sheet. Install the mirror to the chassis in the order of (A), (B), and (C).
3. Fix the right mirror clamp on the chassis by tightening screws.
4. Slightly beat the chassis 3 times.



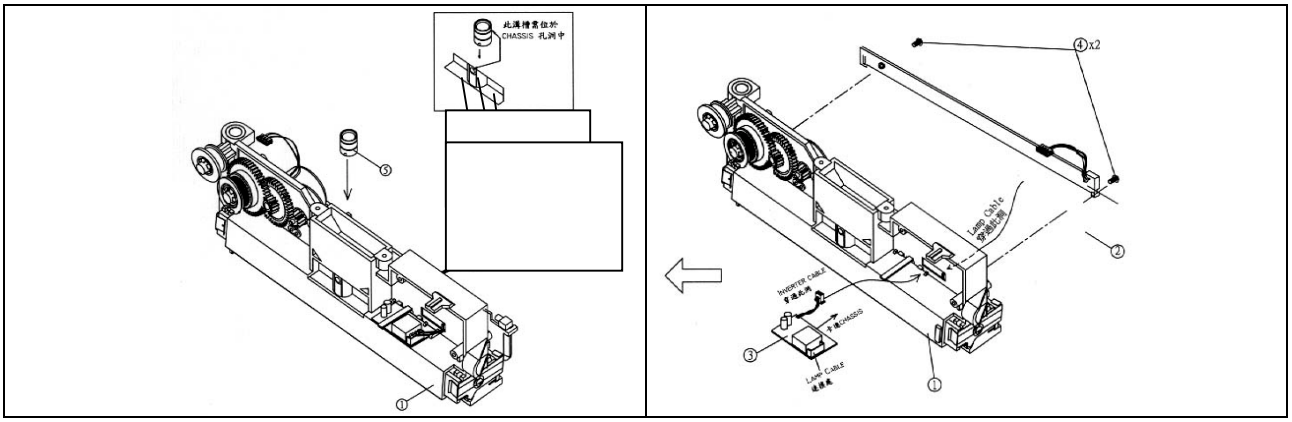
9.1.8 OPTICAL ASSEMBLY (2)

1. Stick chassis sheet to the chassis.
2. Fix the motor on the chassis by tightening the screws.
3. Drop grease to the chassis axis.
4. Put gear 42/14T , gear pulley, and idle pulley around the chassis axises.
5. Fix washer and ring to gear pulley, and idle pulley.



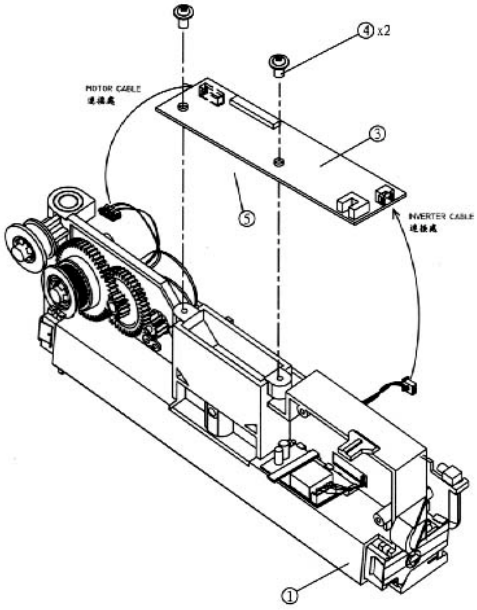
9.1.9 OPTICAL ASSEMBLY (3)

1. Let the lamp cable pass through the chassis. Screw the lamp assembly onto the chassis.
2. Connect the lamp cable to the inverter, and then snap the inverter to the chassis.
3. Fix the lens to the lens notch by setting the white point on the lens downward.



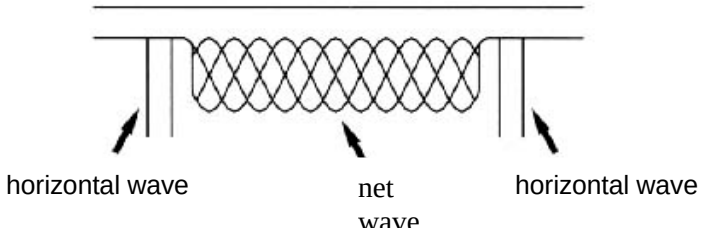
9.1.10 OPTICAL ASSEMBLY (4)

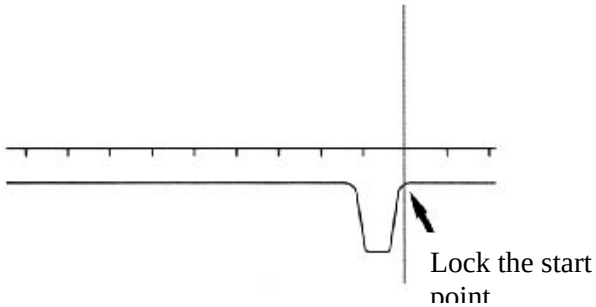
1. Connect the motor cable and inverter cable to the CCD.
2. Screw the CCD onto the chassis.



9.1.11 OPTICAL ADJUSTMENT

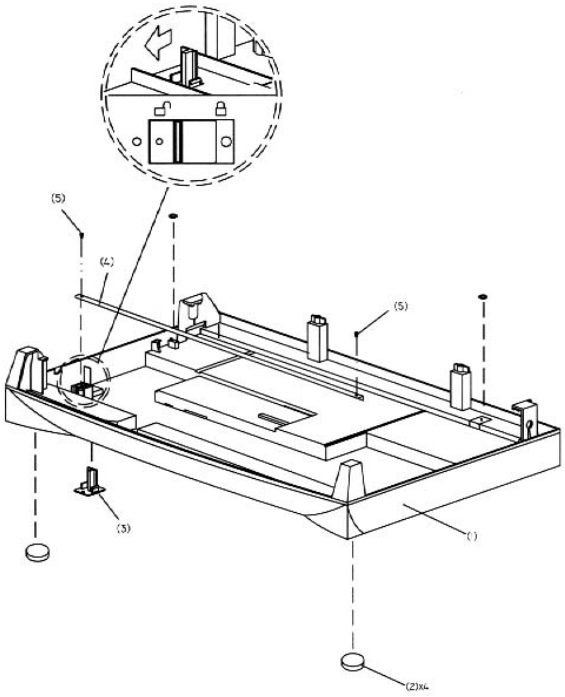
1. Connect the CB66's FFC cable to CCD's FFC cable, and then turn on power.
2. Place the optical assembly on the fixture. Adjust the lens by moving it forward and backward.
3. Adjust the horizontal line.
4. Move Lens to get the best net-shaped wave. It is better to get the widest net with two balanced ends. Fix the screws tightly and get the central line by turning the central line button. Tune T/DIV to 20 micro seconds.
5. Recheck the net wave and check if the central line and left/right waves are correct . If no, readjust it. If yes, fix the CCD board screw and drop red glue.
6. Screw the CCD board and make sure the horizontal line is correct. Drop red glue.
7. Turn off power. Disassemble the CCD cable and the optical assembly.





9.1.12 MAIN BODY ASSEMBLY (1)

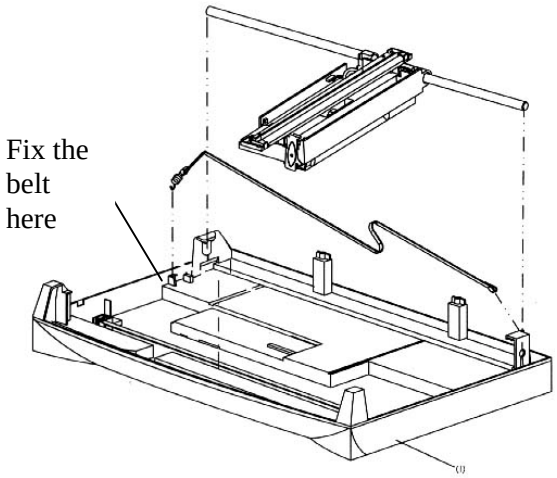
1. Rip the rubber stand's tape. Stick the 4 rubber stands to the bottom housing.
2. Install the lock to the bottom housing.
3. Install and screw the sliding frames to the main body assembly.



9.1.13 MAIN BODY ASSEMBLY (2)

1. Hook the belt assembly to the specified locations on the bottom housing.

2. Lubricate the sliding rod with Dynamic SYN7999 oil. Let the sliding rod pass through the optical assembly, and then install the sliding rod to the bottom housing.
   Make sure the optical assembly on the rod is moved smoothly.

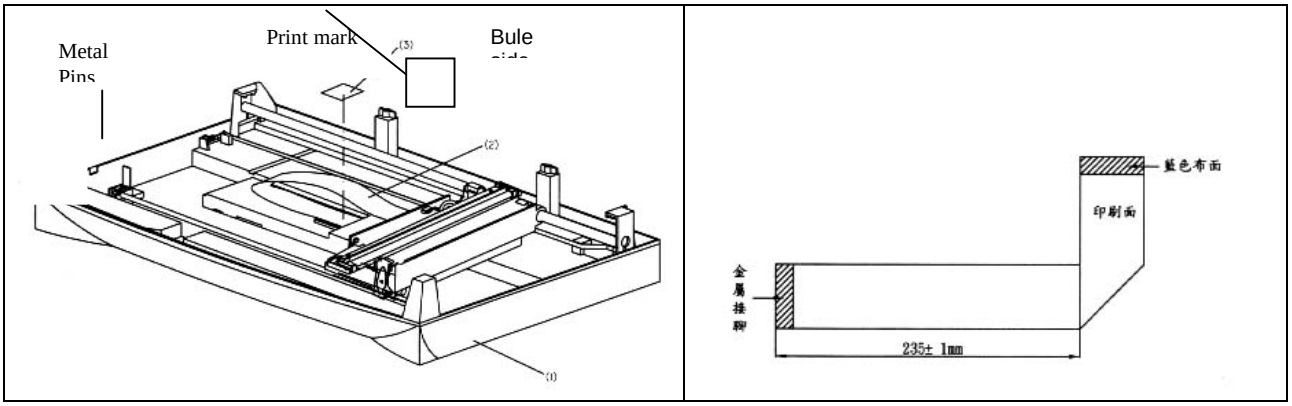


9.1.14 MAIN BODY ASSEMBLY (3)

1. Bend the FFC cable to 90 degrees. Stick twin adhesive on the FFC cable at the designated location 235 mm away from the metal pins.

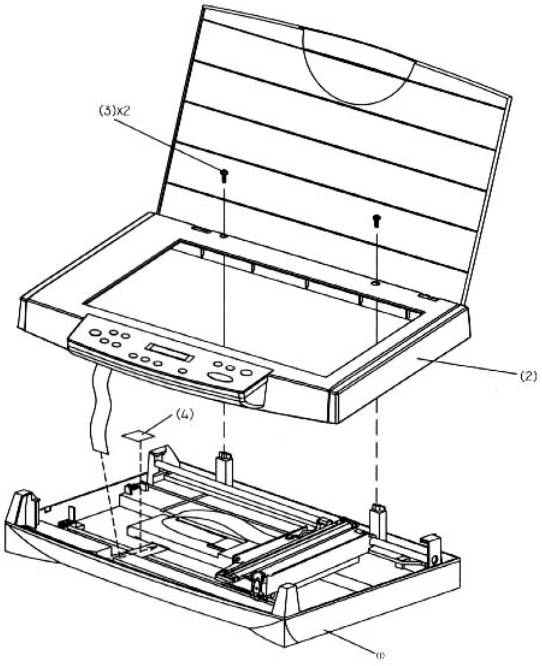
2. Connect the FFC cable to the optical assembly and the bottom housing.

3. Snap a mylar into the bottom housing to fix the FFC cable.



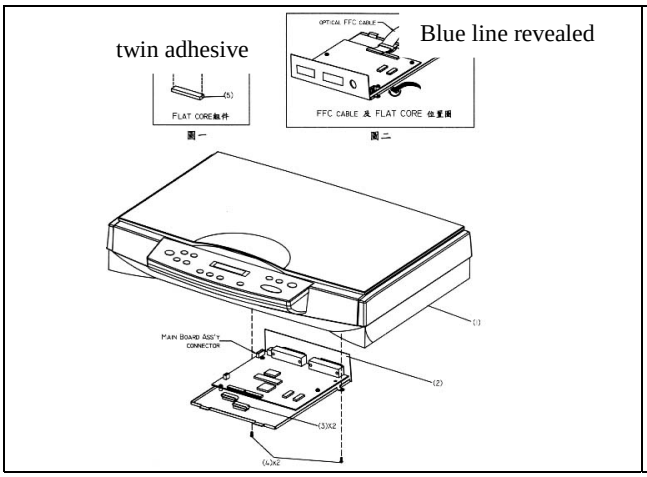
9.1.15 MAIN BODY ASSEMBLY (4)

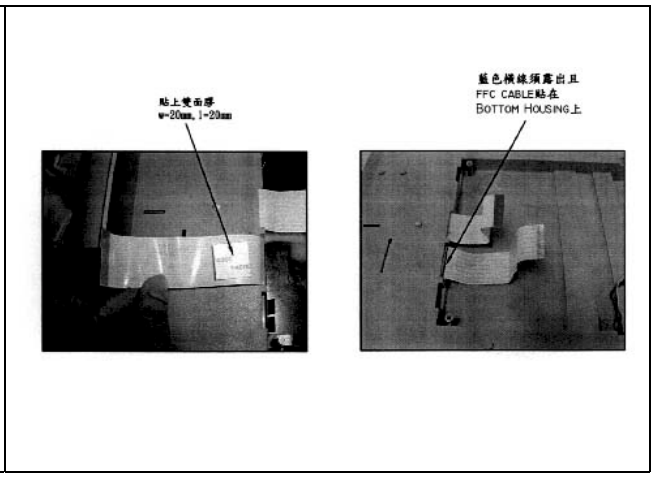
1. Hook the belt to the chassis.
2. Stretch the spring to screw up the belt.
3. Let LCD FFC cable pass through the hole under the sliding frame, and then through the hole on the bottom housing. Snap a mylar to the hole on the bottom housing connected to the LCD FFC cable.
4. Snap and screw the upper housing to the bottom housing.



9.1.16 MAIN BODY ASSEMBLY (5)

1. Stick the sponge to the flat core.
2. Stick the twin adhesive to the FFC cable at the location indicated.
3. Stretch the FFC cable to reveal the blue marked line, and then stick to the bottom housing.
4. Let FFC cables pass through the flat cores, and then connect to the main body assembly. Stick the two flat cores to the main body assembly.
5. Connect the motor cable to the main board assembly's connector.
6. Screw the main board assembly to the bottom housing.



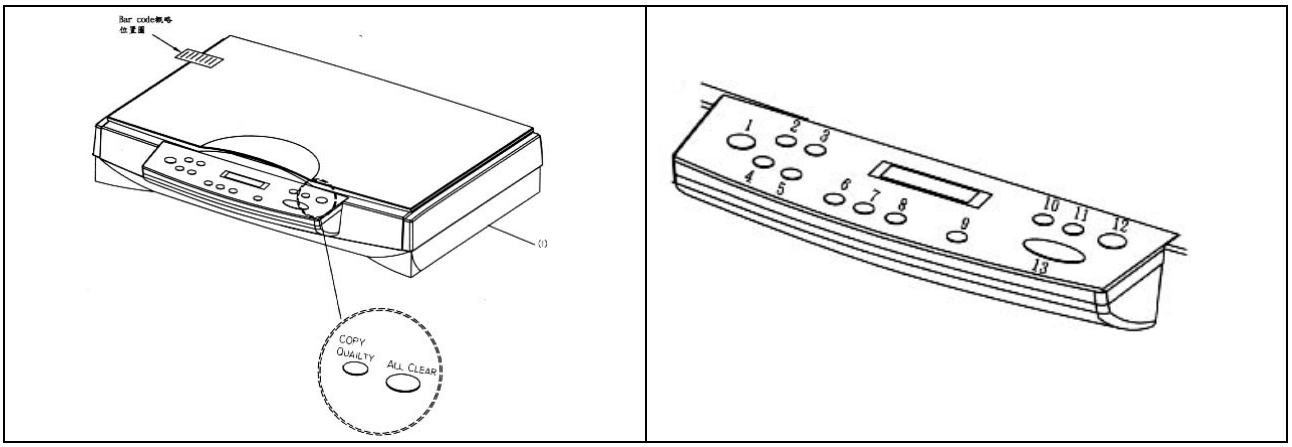


9.1.17 RUN-IN AND BUTTON TEST

1. Press “Auto/Text/Photo” and “All Clear” buttons together, and then plug in power.

2. After the LCD shows “KEY BUTTON TEST”, press the buttons in turn from Number 1 to Number 13.

3. Press “Copy” button after the LCD shows “123456789ABCD”.
   If the message, “0000000000000”,”1111111111111”,……., appears, the button testing is OK. When the LCD shows “Burn-In”, the DS610CF is doing Run-in test.



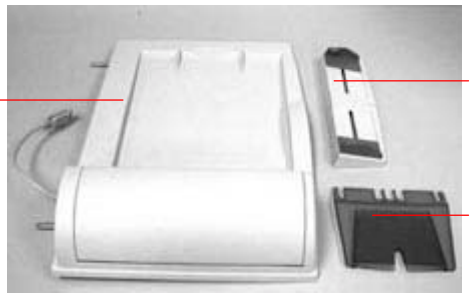
10. DS610CF AUTOMATIC DOCUMENT FEEDER (ADF) SERVICE GUIDE

The DS610CF Automatic Document Feeder (ADF) is a very convenient addition to your current DS610CF. With the ADF, you can automatically copy or scan up to 25 pages at a time.

10.1 INSTALLING THE ADF

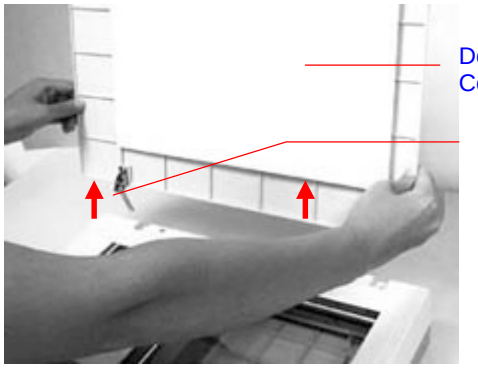
10.1.1 MAIN COMPONENTS

1. ADF Document Cover
2. ADF Paper Tray
3. ADF Paper Support



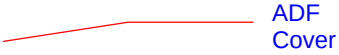
10.1.2 TO INSTALL THE ADF

1. Turn off your DS610CF.
2. Disconnect the power cable.
3. Remove the document cover by opening the cover and lifting the studs from the hinge holes at the rear of theDS610CF.



Note: Please store the document cover on a flat surface in a safe place.

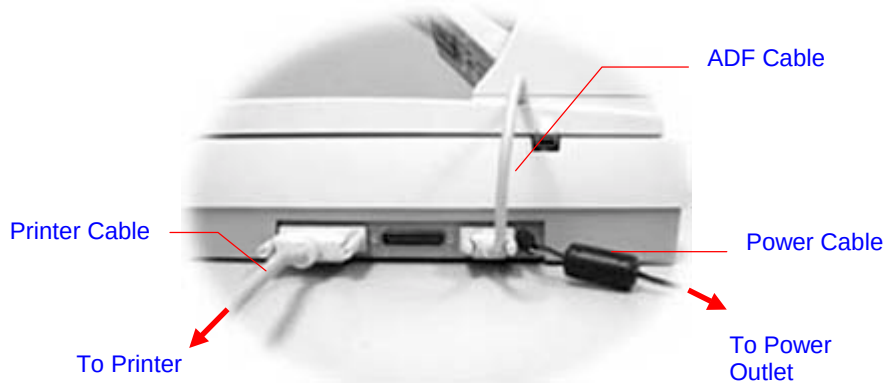
4. Hold the ADF document cover and insert its studs to the hinge holes at the rear of theDS610CF.



10.1.3 CONNECTING THE CABLES

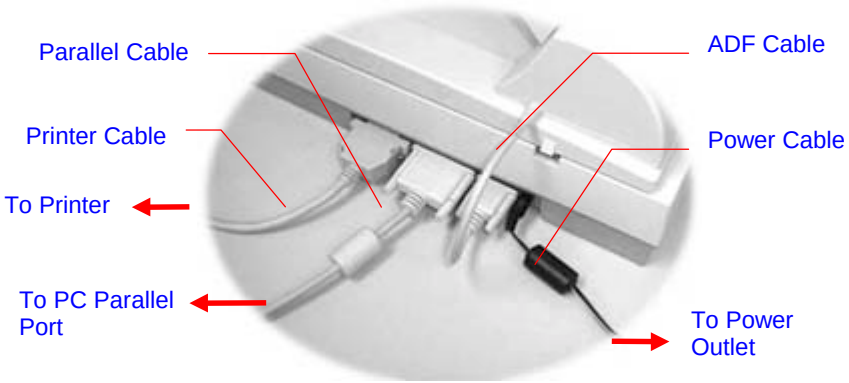
10.1.3.1 To connectDS610CF to work as a Copier

Connect the ADF cable, the power cable, and the printer cable (not included) respectively.



10.1.3.2 To connectDS610CF to work as a Scanner

Connect the ADF cable, the power cable, the parallel cable, and the printer cable (not included) respectively.



10.2 MAINTAINING THE ADF

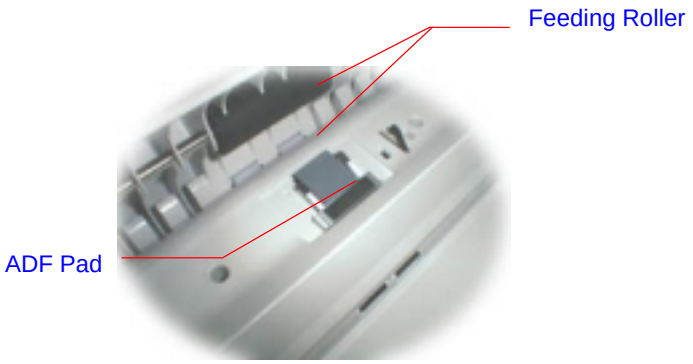
10.2.1 CLEANING THE ADF

The DS610CF is designed to be maintenance free. However, it still needs to be cleaned occasionally to ensure optimum image quality and performance.

From time to time the pad assembly and feeding rollers may become contaminated with ink, toner particles or paper dust. In this case theDS610CF may not feed documents smoothly. If this occurs please follow the cleaning procedures to return your Scanner to its original state.

The cleaning procedures:

1. Moisten a cotton swab with isoprophyl alcohol (95%).
2. Gently open the ADF front cover. Wipe the feeding rollers by moving the swab from side to side. Rotate the rollers forward with your finger and repeat the above cleaning procedures until the rollers are clean. Be careful not to snag or damage the pick springs.
3. Wipe the pad in the direction from top to bottom. Be careful not to hook the pick springs.
4. Close the ADF unit. Your Scanner is now ready for use.



10.2.2 REPLACE THE ADF SNAP-IN PAD MODULE

After scanning approximately 20,000 pages through the ADF, the pad may be worn out and you may experience problems with document feeding. In this case, it is highly recommended to replace the pad module with a new one. For ordering the pad module, please consult your nearest dealer and follow the procedure below to replace it.

Disassembling Procedure

1. Gently open the ADF front cover to the left.
2. Press both arms of the ADF snap-in pad module inwardly with your two fingers to pull out the ADF snap-in pad module.

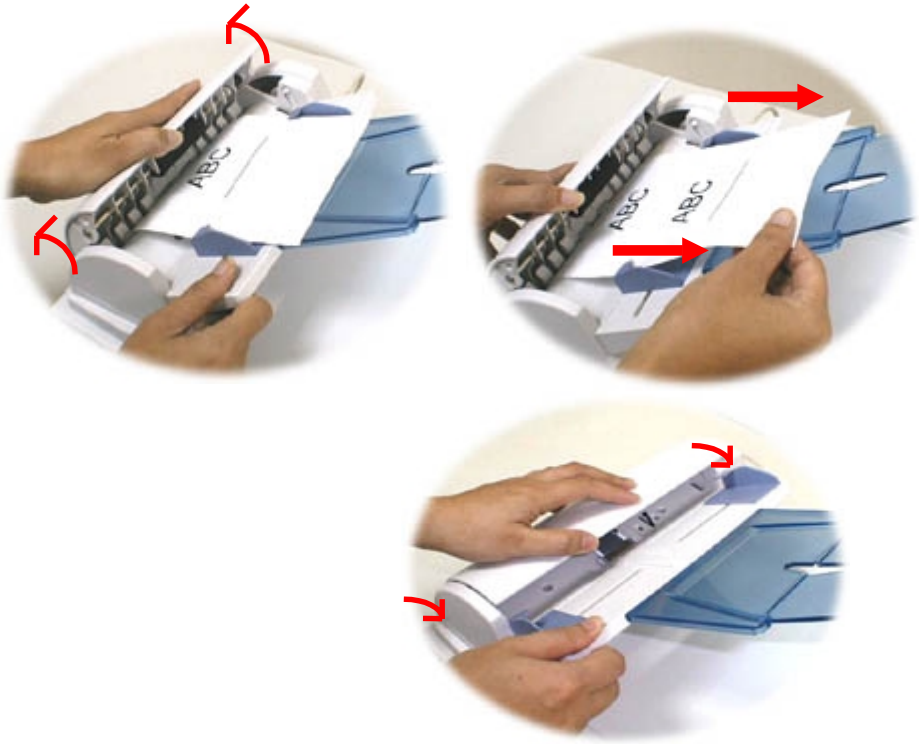
Assembling Procedure

1. Take out the ADF pad module from the box.
2. Press both arms of the ADF snap-in pad module inwardly with your two fingers
3. Place it into the holes until it snaps into place.

10.3 HOW TO CLEAR THE PAPER JAM

In the event of a paper jam, follow the procedures below to remove the paper:

1. Turn theDS610CF off by disconnecting the power cable.
2. Gently open the ADF front cover to the left.
3. Carefully pull the paper out of the ADF unit.
4. Close the ADF front cover.
5. Turn on theDS610CF by reconnecting the power cable. Your DS610CF is now ready to use.

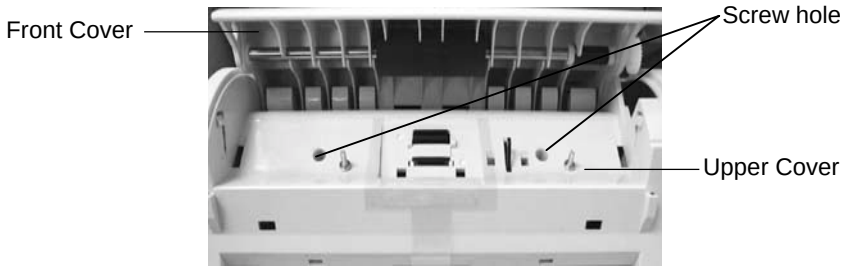


10.4 ADF DISASSEMBLY

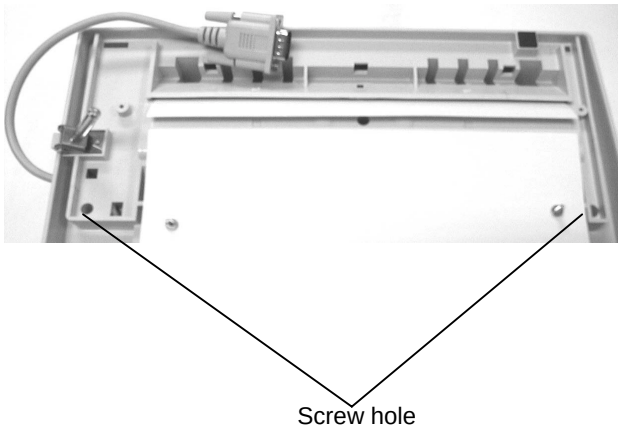
10.4.1 DISASSEMBLING PROCEDURE

1. First, open the ADF front cover by moving it backward.

2. Loosen the two screws which fix the upper cover, as indicated below.

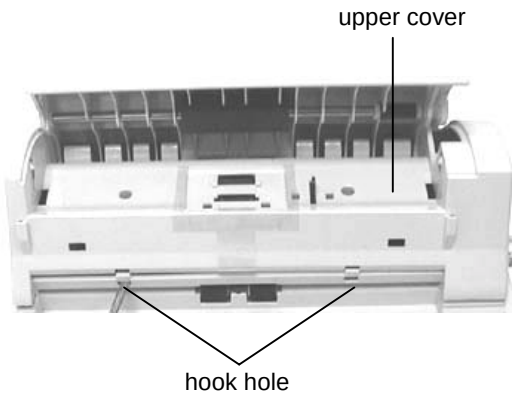


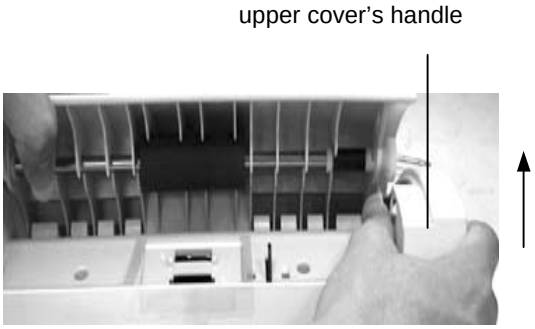
3. Gently turn the ADF upside down, and then loosen the two screws fixing the bottom, as indicated below.



4. Insert and raise the front end of a screw driver in the two hook holes to unlatch the upper cover, as indicated in the left-side picture below.

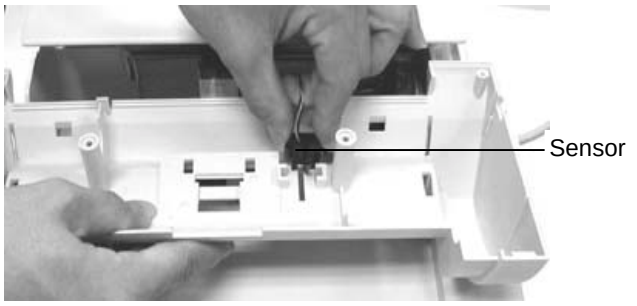
5. Pull and lift the upper cover's handles respectively to remove the upper cover , as indicated in the right-side picture below..

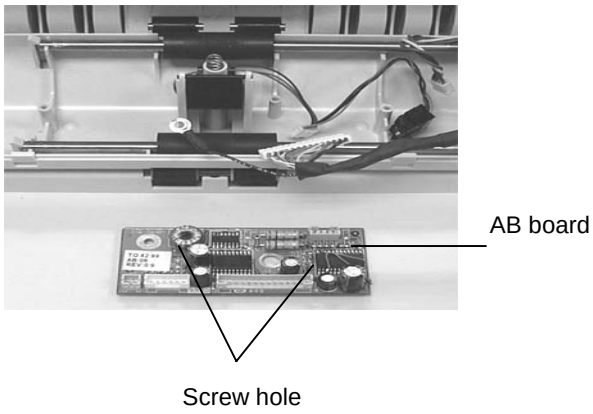




6. Remove snapped-in sensors, as indicated in the left-side picture below .

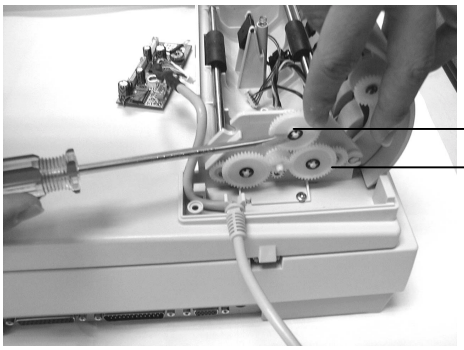
7. Replace the AB board by loosening the screws on the AB board, as indicated in the left-side picture below.

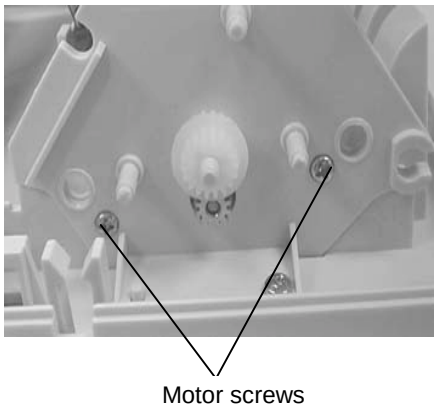




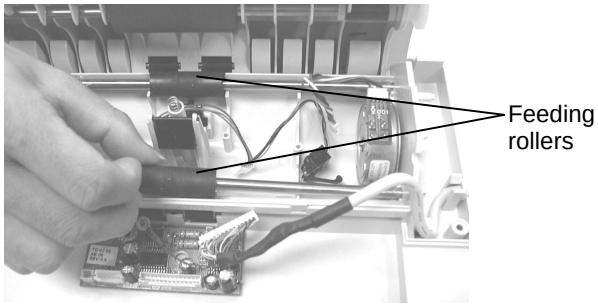
8. Push out the metal rings to remove the gears, as indicated in the left-side picture below. (remember each gear location for reassembling due to the difference in size.)

9. Remove the motor by loosening the screws fixed on the motor, as indicated in the left-side picture below.





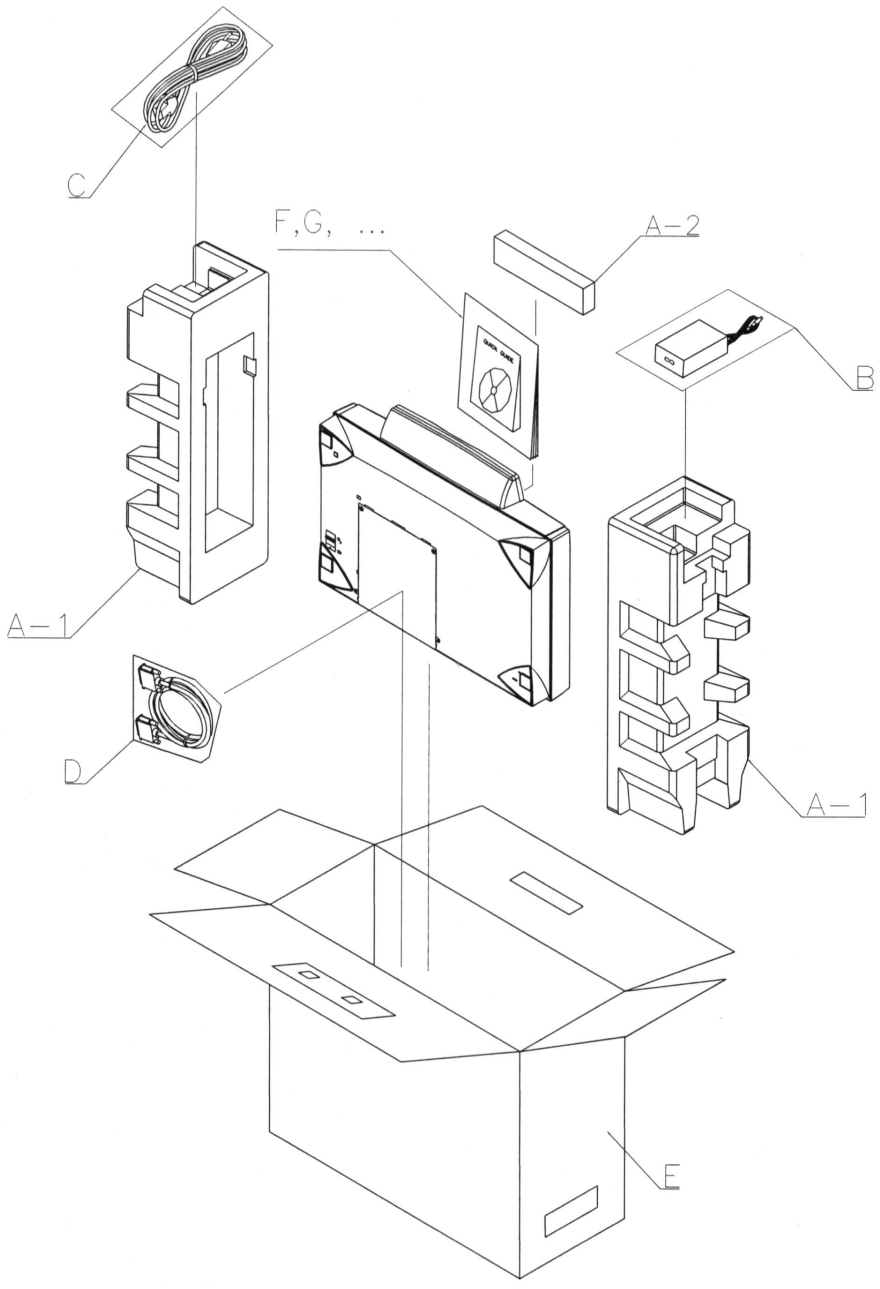
10. Remove the feeding rollers by lifting them, as indicated below.

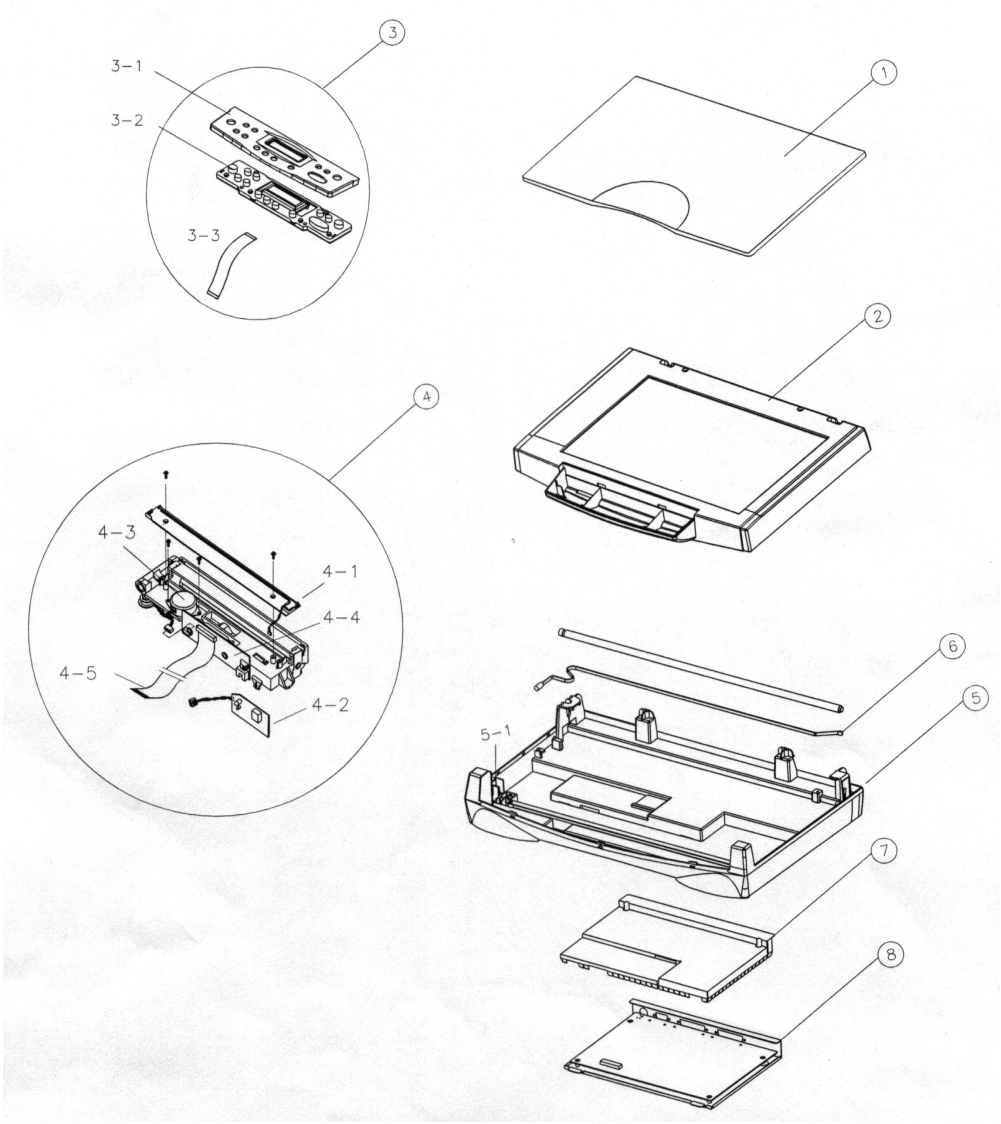


11. PARTS

11.1 Spare Part Diagram/Table

11.1 SPARE PART DIAGRAM




3
3-1
3-2
3-3
1
2
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4-3
4-1
4-4
4-5
4-2
6
5
5-1
7
8

DS610CF (CLASS B) Service Parts Table			
ITEM	DESCRIPTION	AVISION P/N	REV.
1	DOCUMENT COVER ASSEMBLY(••LABEL)	002-0779-0-SP	1.0
2	UPPER HOUSING ASSEMBLY	003-5221-0-SP	1.0
3	CONTROL UNIT (English version) 002-0936-0 + 002-0680-0	003-5262-0-SP	1.0
3-1	CONTROL COVER ASSEMBLY (English version)	002-0936-0-SP	1.0
3-1	CONTROL COVER ASSEMBLY (Traditional Chinese)	002-1159-0-SP	1.0
3-1	CONTROL COVER ASSEMBLY (Simplified Chinese)	002-0946-0-SP	1.0
3-2	CONTROL BOARD ASSEMBLY	002-0680-0-SP	2.0
3-3	FLEXIBLE FLAT CABLE: 22P, P=1.25, t=35um, L=250mm, BD TYPE	104-0102-0-SP	1.0
4	OPTICAL ASSEMBLY	002-0994-0-SP	1.0
4-1	LAMP ASS'Y	002-1136-0-SP	1.0
4-2	INVERTER	003-0187-0-SP	1.0
4-3	CHASSIS ASS'Y	002-1138-0-SP	1.0
4-4	CB114	004-0441-0-SP	1.0
4-5	FLEXIBLE FLAT CABLE: 30P, P=1.0, t=0.35u, L=360, BD TYPE	104-0128-0-SP	1.0
5	BOTTOM HOUSING ASSEMBLY	002-0995-0-SP	1.0
5-1	SHIPPING LOCK	051-0761-0-SP	1.0
6	BELT ASSEMBLY	003-0284-0-SP	1.0
7	SHADING CASE	054-0261-0-SP	1.0
8	MAIN BOARD ASSEMBLY (PCBA MB145) + F/W	002-1213-0-SP	1.0
A-1	EPS FOAM: 466x158x120	072-0150-0	1.0
A-2	EPS FOAM: 315x80x40	072-0153-0	1.0
B	POWER ADAPTOR (EIAJ-4)	003-0295-0-SP	1.0
C	AC POWER CORD: US, 2-PIN, 7A/125V, 1.8m	104-0080-0-SP	1.0
D	DB25P CABLE	104-0061-0-SP	2.0
E	CARTON	073-0678-0	2.0
F	CD	006-0165-0	1.0
G	QUICK GUIDE : DS600C CLASS B, multiple languages	251-0161-0	1.0

Table 10.1 Spare Parts for DS610CF